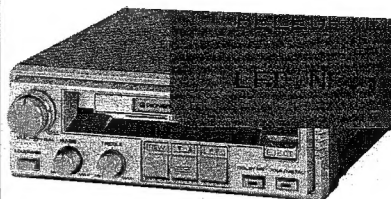


Service Manual

 **PIONEER®**



**ORDER NO.
CRT-312-0**

COMPONENT CAR STEREO CASSETTE DECK

KP-717G E

NOTE:

The cassette mechanism description, refer to the CX-118FV, FV/A Service Manual (CRT-199).

SPECIFICATIONS

General

Power source DC14.4V (10.8~15.6V allowable)
Grounding system Negative type
Dimensions 150(W) x 50(H) x 167(D) mm
Weight 1.5kg
Tone controls (bass) ± 10 dB (100 Hz)
(treble) ± 10 dB (10 kHz)
Loudness contour +12 dB (100 Hz), +4 dB (10 kHz)
(volume: -30 dB)
Maximum output level 200mV
Output impedance 1k Ω

Tape Player

Tape Compact cassette tape (C-30~C-90)
Tape speed 4.76cm/sec. (+0.19cm/sec. -0.05cm/sec.)
Fast forward/rewind time Approx. 100 sec. for C-60
Wow & flutter 0.09% (WRMS)
Frequency response Metal: 30~18,000 Hz (± 3 dB)
Normal: 30~15,000 Hz (± 3 dB)
Stereo separation 45 dB
Signal-to-noise ratio
. Dolby NR IN; 63 dB (IEC-A network)
. Dolby NR OUT; 55 dB (IEC-A network)

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

CONTENTS

1. PARTS LOCATION	1
2. CIRCUIT DESCRIPTION	2
3. BLOCK DIAGRAM	6
4. LEVEL DIAGRAM	6
5. ADJUSTMENT	7
5.1 Dolby NR Level Adjustment	7
6. SCHEMATIC CIRCUIT DIAGRAM	10
7. CONNECTION DIAGRAM	13
8. CABINET EXPLODED VIEW	16
9. CHASSIS EXPLODED VIEW	17
10. CASSETTE MECHANISM EXPLODED VIEW (TOP)	20
11. CASSETTE MECHANISM EXPLODED VIEW (BOTTOM)	23
12. ELECTRICAL PARTS LIST	26
13. PACKING METHOD	28

CAUTION

When Handling IC PD2001.

Please Observe:

IC PD2001 (IC402 in the Control Unit) is C-MOS IC of extremely low power consumption and very high input impedance. Unless handled with special care, they could be damaged by static electricity induction. This IC is supplied with a shorting cap (of aluminum foil) attached. When soldering or performing other repair work, always attach this cap as shown below. Remove the cap after the repair has been completed.

Also, this type IC must not be inserted in a polystyrene package for storage.

- Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

1. PARTS LOCATION

NOTE

- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
- ★ ★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.*

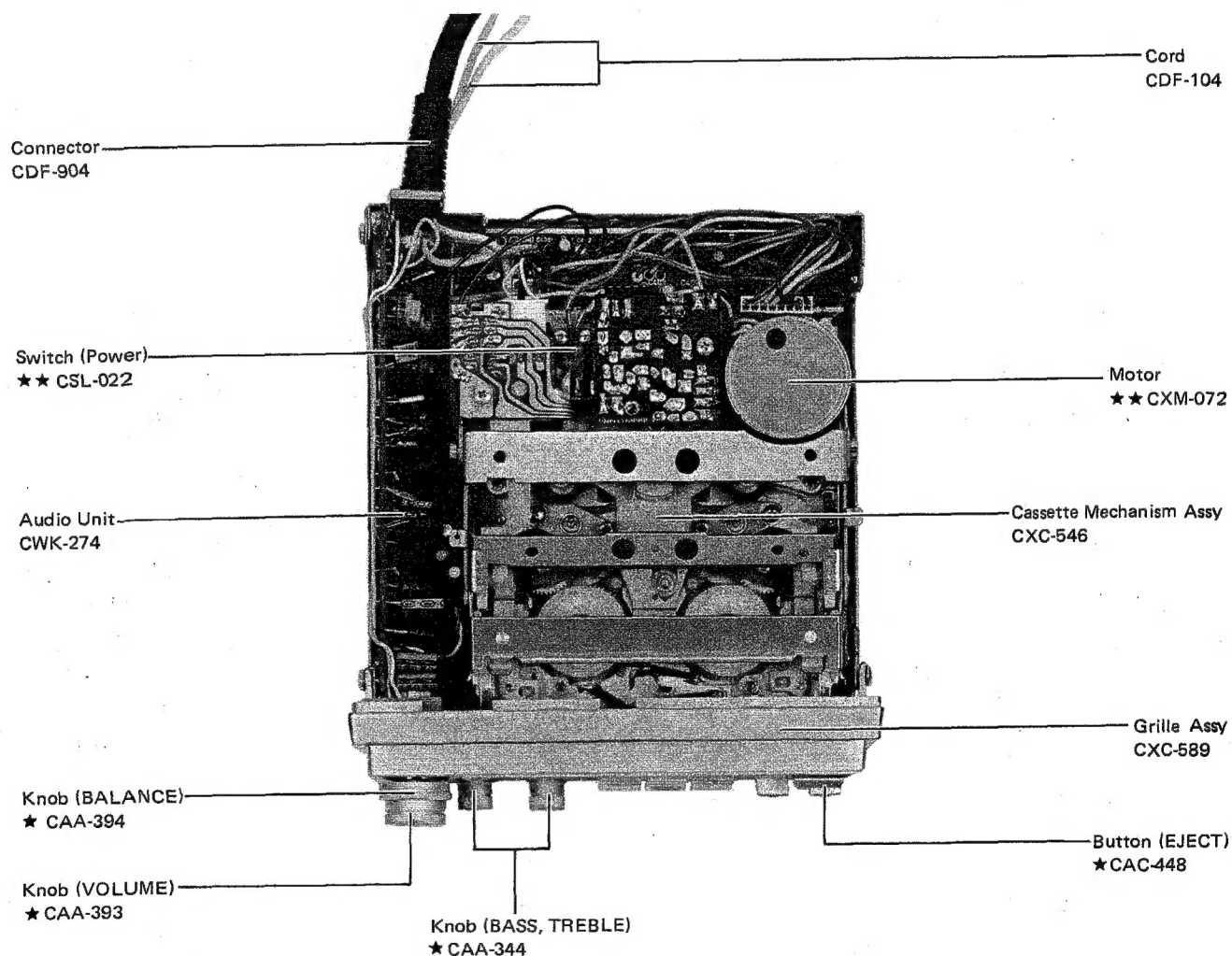


Fig. 1

2. CIRCUIT DESCRIPTION

● Cassette Mechanism Control Circuit

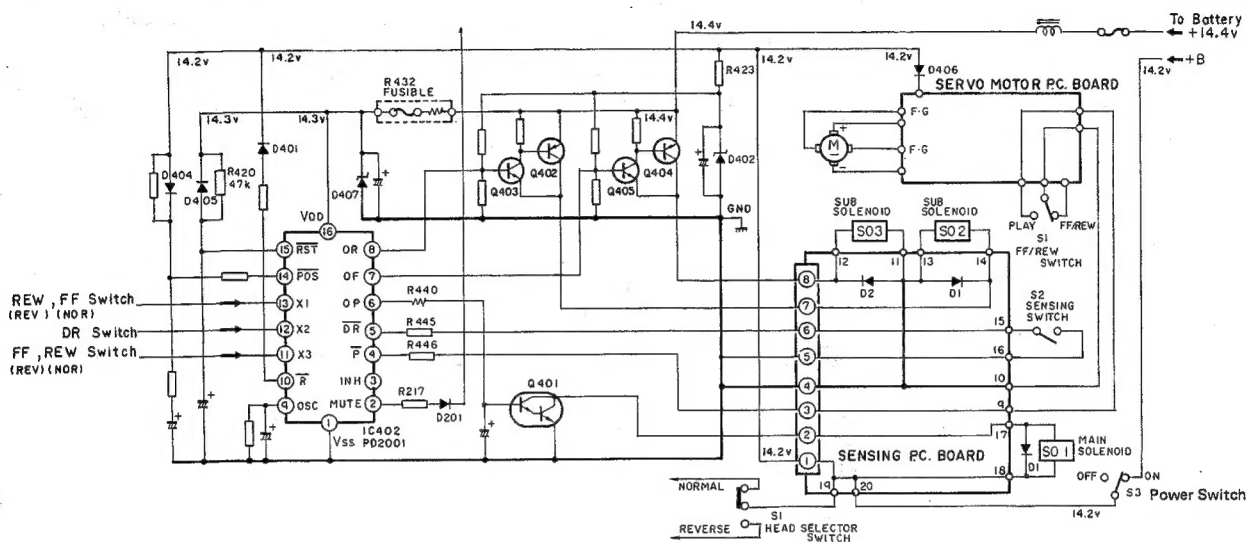


Fig. 2

In this control circuit:

- 1) Feather touch tape deck controller PD2001 (16P DIP C-MOS IC)
- 2) The X1, X3 (REW, FF input) terminals are for both input and output. When a key is pressed, the signal passes through IC401 and, according to the transistor driver and IC403, lights the appropriate LED and, in the case of REW and FF, causes the LED to flash on and off.
- 3) Direction change operation (Fig. 3)

A CLK OSC is included with terminal 1 and is constantly generating an 80 Hz pulse. This passes through the 5-bit binary counter to control the timing of all operations. When an input from X2 is received, a muting signal is generated and a signal to drive the main solenoid is sent for 150msec from terminal ⑥.

Once operation of the main solenoid has ended, a muting signal is generated for another 200msec to prevent pop noise.

4) Sub-solenoid double-pull circuit (Fig. 4)

When the transport mode is switched from play to FF or REW, a signal is generated from terminals ⑦ and ⑧ and the sub-solenoids are both pulled only when the signal is absorbed. In the FF and REW modes, the sub-solenoid in the input direction is held and the other one moves away.

This double-pull system doubles the sub-solenoid absorption head base stopper release power. That is, the load on the solenoid is lessened so they are stronger with less power.

5) Operation at tape end (Fig. 5)

During FF or REW, when the tape end detection switch S2 (cassette mechanism assembly) momentarily switches on and an input is received at terminal ⑤ (DR), the sub-solenoids are released. Then, after 50msec, a signal is generated from terminal ⑥ to drive the main solenoid and change the direction of tape travel.

6) Reset terminal

In order to make the rise of reset terminal ⑮ slower than that of VDD terminal ⑯ and assure a rapid drop when power is turned off, an external circuit is provided to be absolutely certain that initial reset is applied.

X 2 (\overline{DR} CHANGE) INPUT

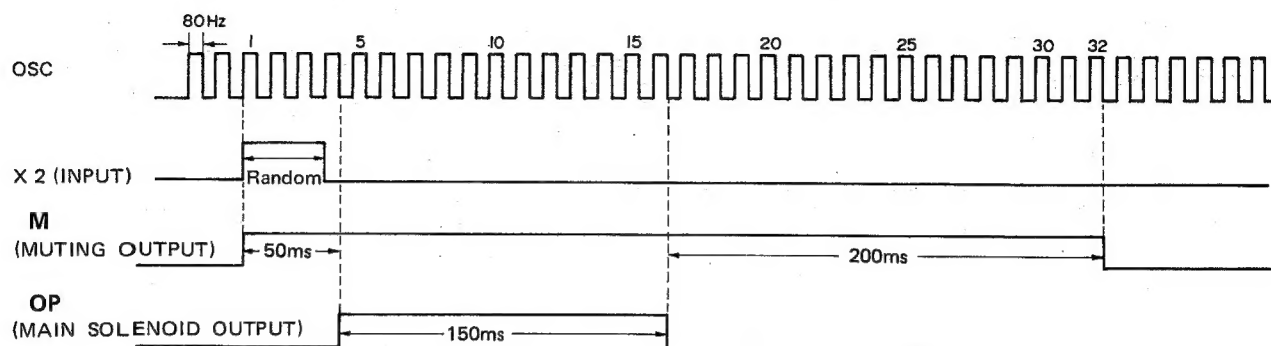


Fig. 3

X 1 INPUT

X 3 INPUT

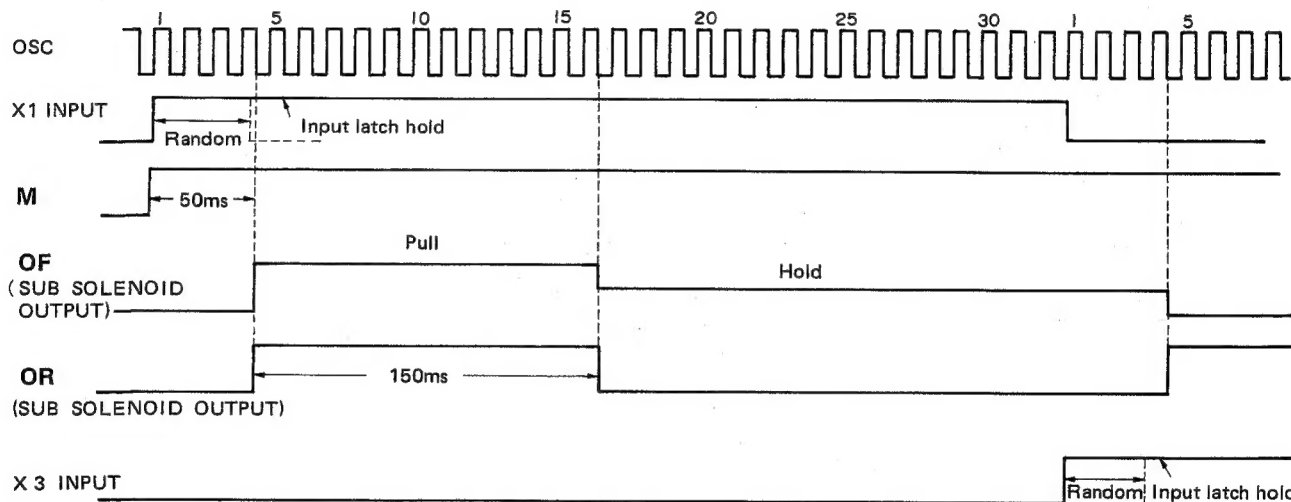


Fig. 4

\overline{DR} INPUT OPERATION

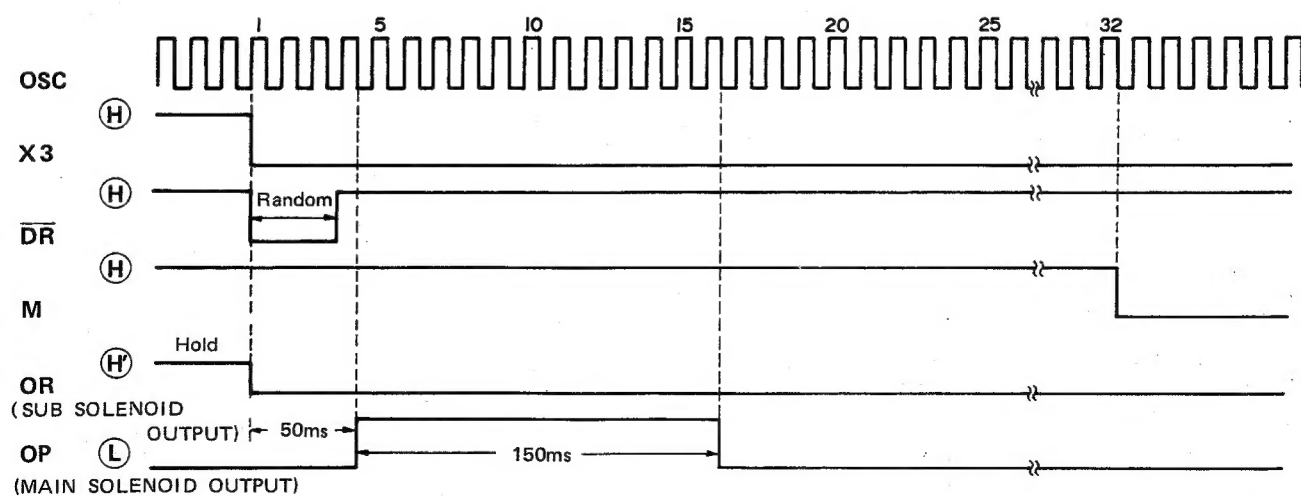


Fig. 5

• POS (Power OFF Stop) Operation

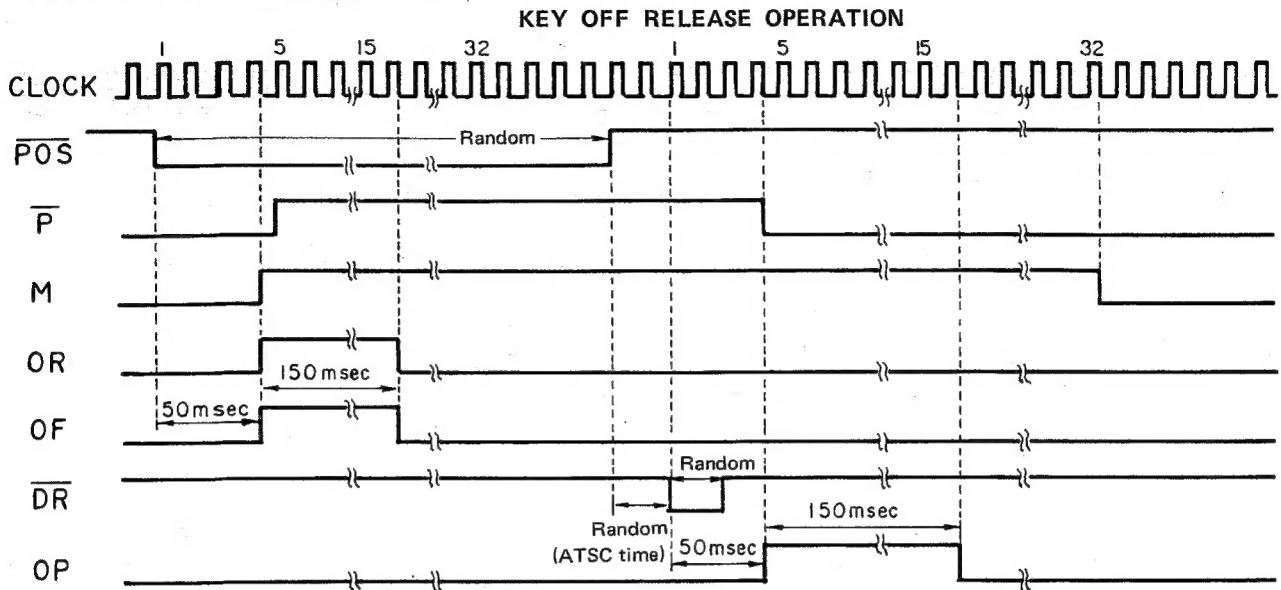


Fig. 6

When the accessory key is turned off, the positive terminal ⑭ of IC402(PD2001) goes to "L" about one second later. A 150msec signal is generated from terminals ⑦ and ⑧ (OF, OR) to drive the sub-solenoids (SO2, SO3)

and stop all operations. When POS operations is cancelled, operation begins from automatic tape slack cancel and the play mode is begun.

• FF/REW Exclusivity Circuit

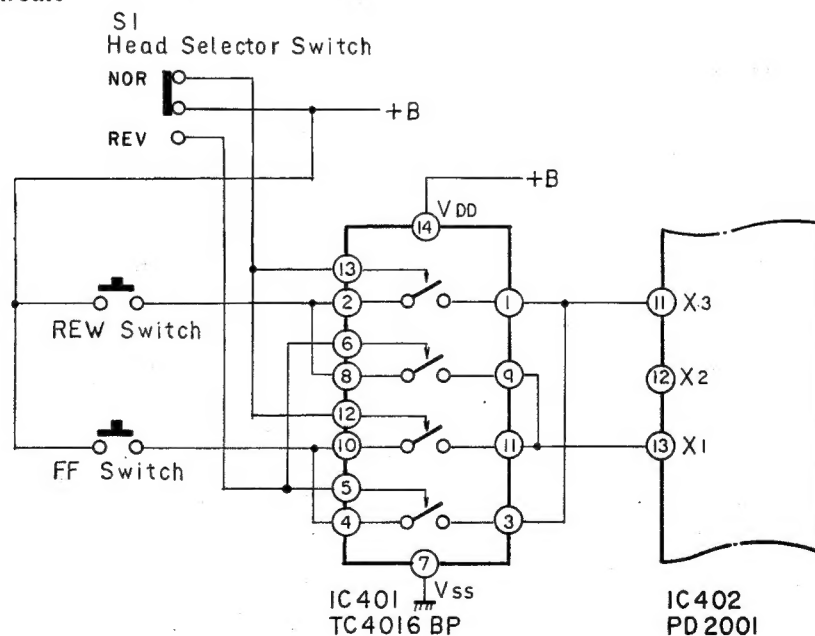
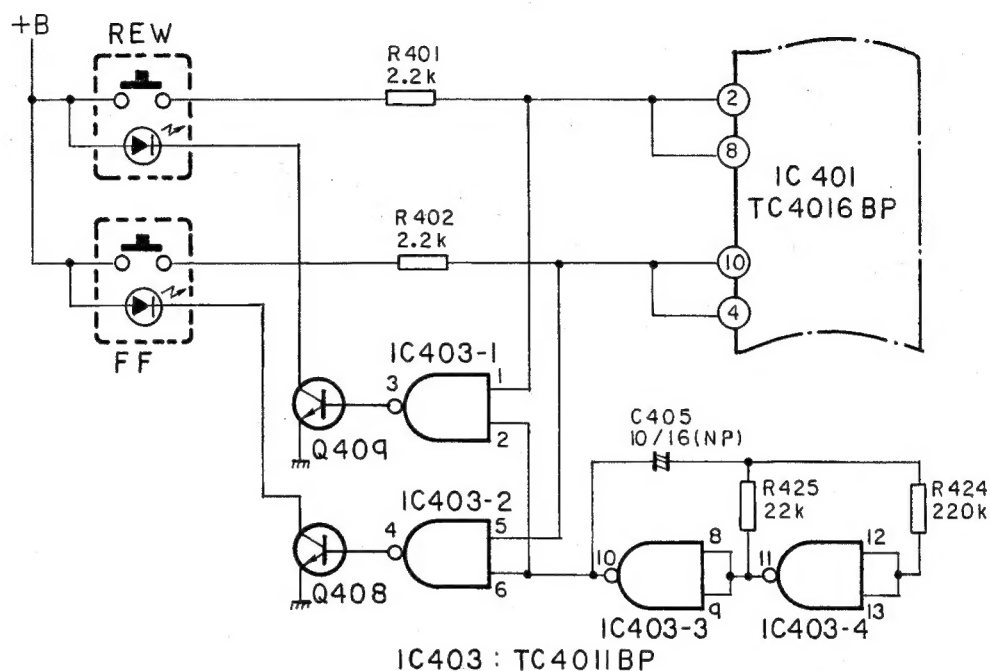


Fig. 7

This circuit permits FF and REW operation when either button is pressed in the normal or reverse modes. In the normal mode, terminals ⑫ and ⑬ of IC401 (TC4016BP) go to "H", the electronic switches between ⑩ and ⑪ and ① and ② turn on and the electronic switches between ③ and ④ and ⑧ and ⑨ turn off.

As a result, the signal generated when the FF button is pressed goes to terminal ⑬ (X1) of IC402 and the signal generated when the REW button is pressed goes to terminal ⑪ (X3). In the reverse mode, the FF signal goes to terminal ⑪ (X3) of IC402 and the REW signal to terminal ⑬ (X1), a different transmission path than the normal mode.

● FF/REW LED Circuit



$$\text{Oscillation cycle } T \approx 2.2 \times (R425) \times (C405)$$

Fig. 8

This circuit lights the FF or REW LED when one of those buttons is pressed during the play mode or causes the FF or REW LED to flash on and off during the normal FF or REW mode.

During the play mode, terminals ① and ⑤ of IC403 (TC4011BP) are "L" so terminals ③ and ④ are "H". The FF or REW LED lights because Q408 or Q409 goes on.

When the FF button is pressed, terminal ⑤ of IC403 goes to "H". An output synchronized with the oscillation of the inside of IC403 (the two gates IC403-3 and IC403-4) and C405, R425 goes to Q408 from terminal ④ and causes the FF LED to flash on and off. When the REW button is pressed, terminal ① of IC403 goes to "H". An output synchronized with the inside of IC403 (the two gates IC403-3 and IC403-4) and C405, R425 goes to Q409 from terminal ③ and causes the REW LED to flash on and off.

3. BLOCK DIAGRAM

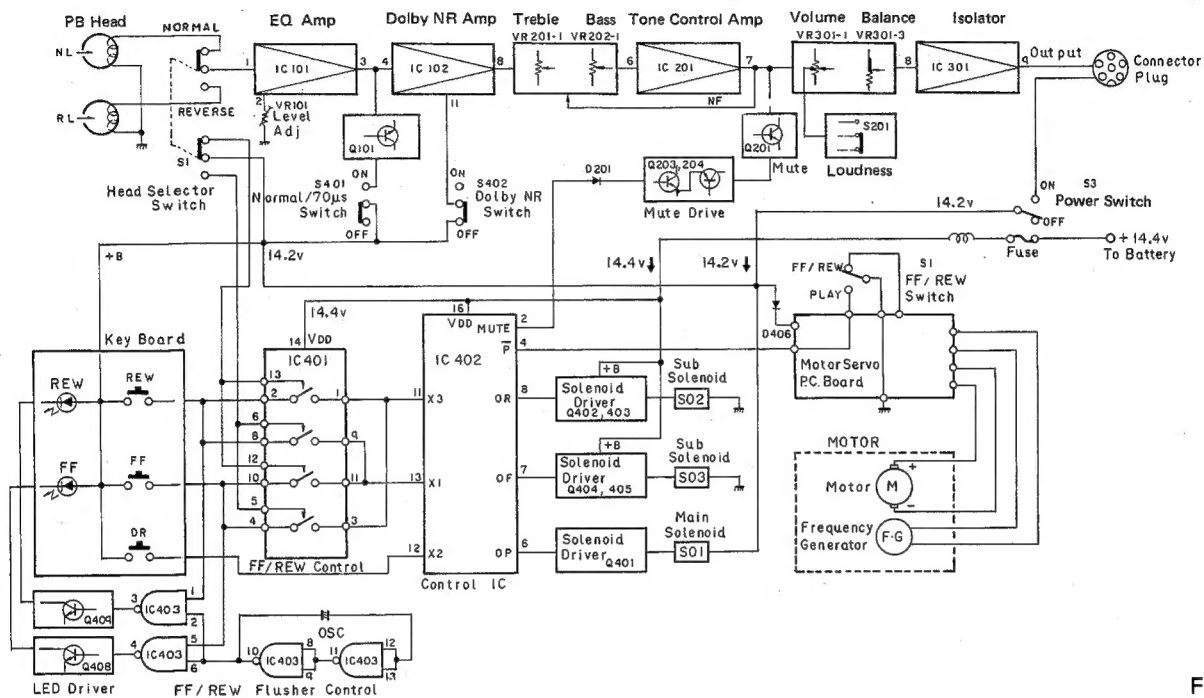


Fig. 9

4. LEVEL DIAGRAM

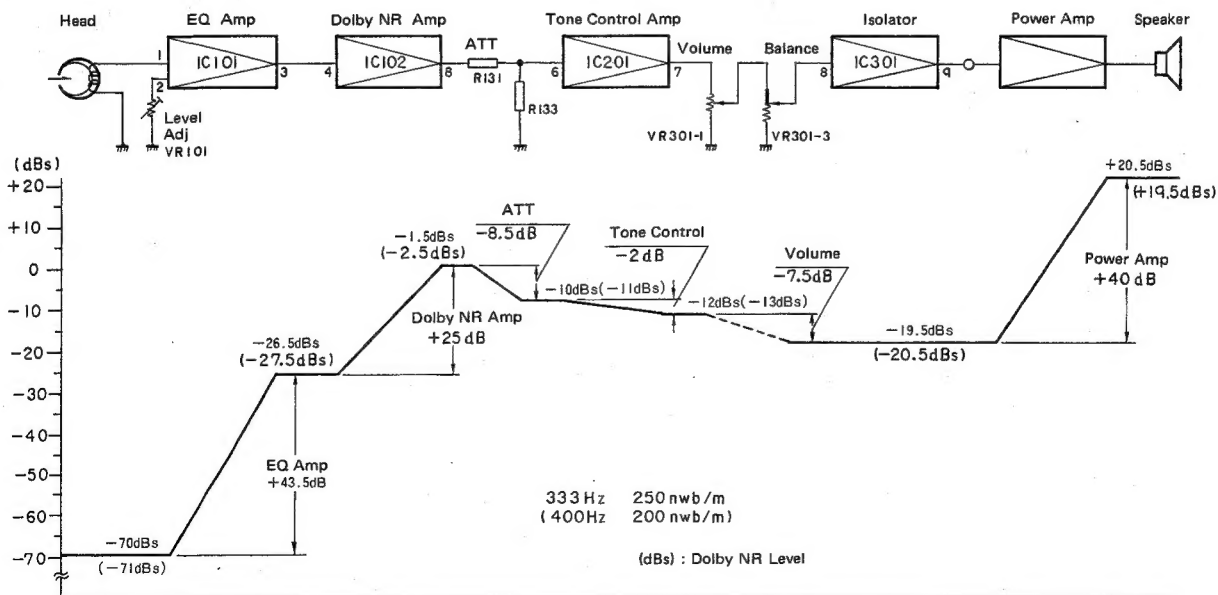
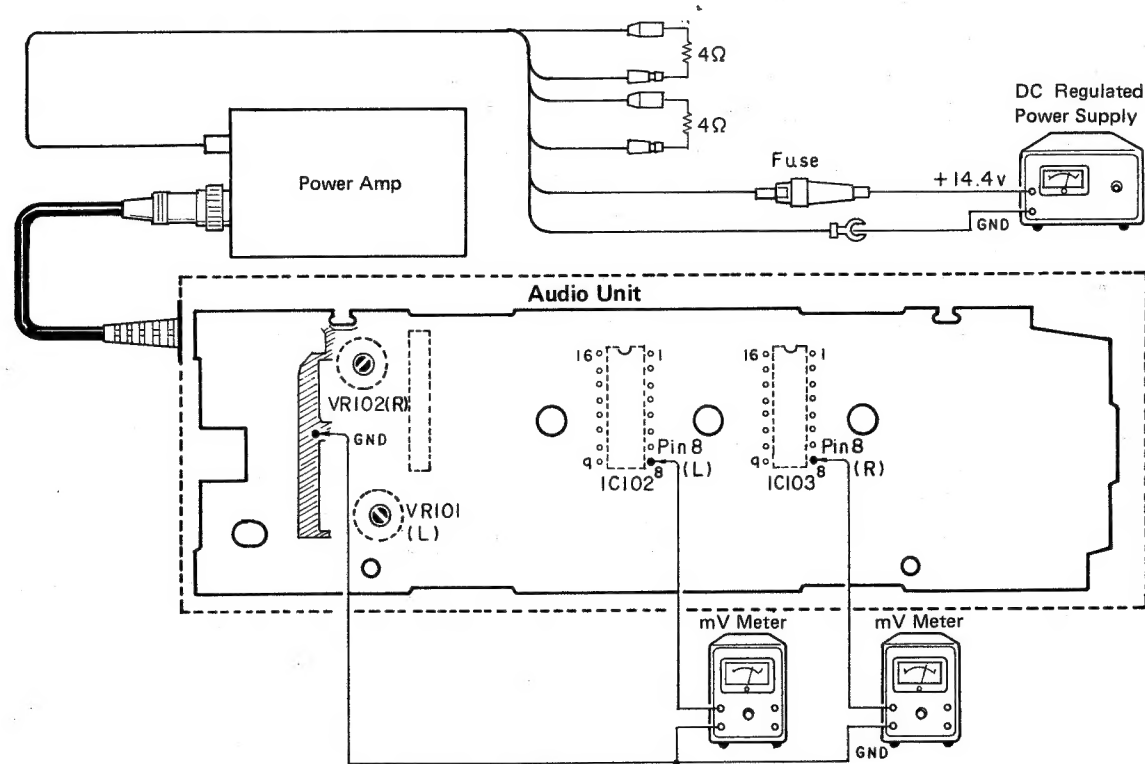


Fig. 10

5. ADJUSTMENT

5.1 DOLBY NR LEVEL ADJUSTMENT

• Connection Diagram



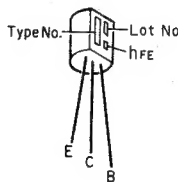
• To Adjust

1. Playback the CT-150 (400 Hz, 200nwb/m) test tape, and adjust VR101 (Lch) and VR102 (Rch) so that the mV meters read 580mV (−2.5dBs).

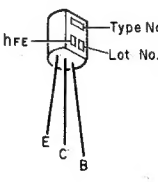
Fig. 11

• IC's and Transistors

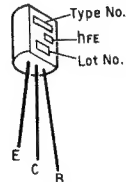
2SC1815
2SC945



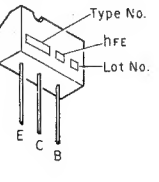
2SC1740LN



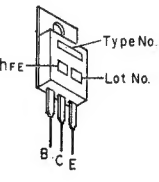
2SD468
2SD667



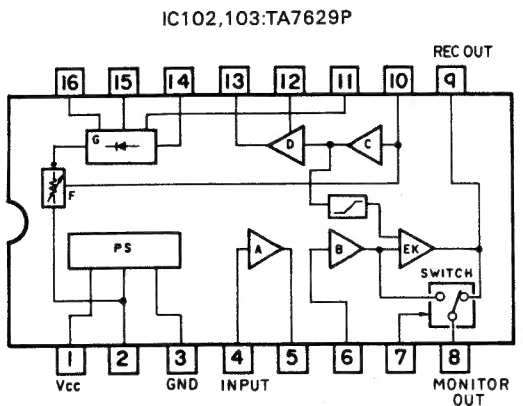
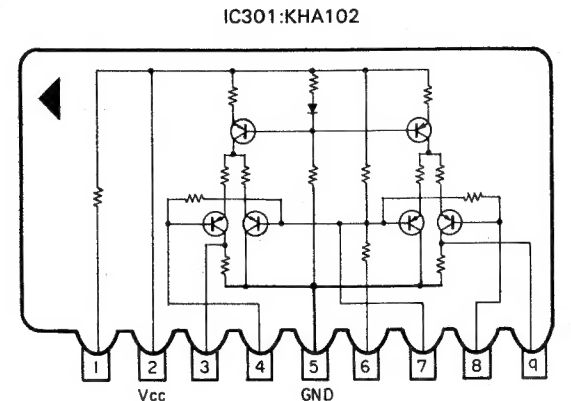
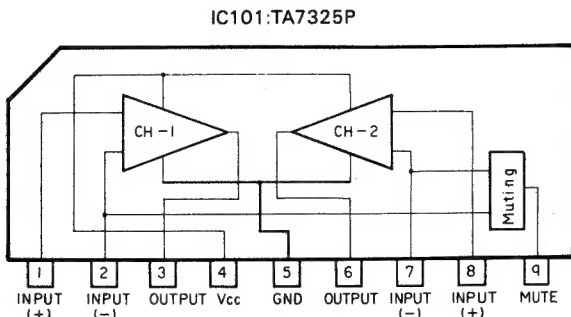
2SA937F
2SC2021F
2SC1652F



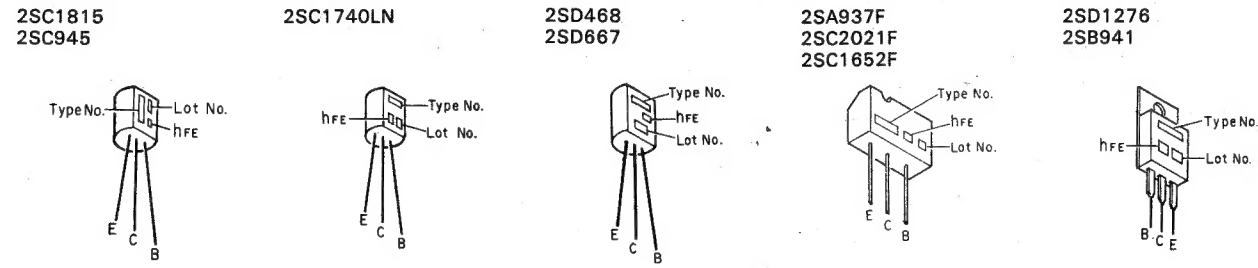
2SD1276
2SB941



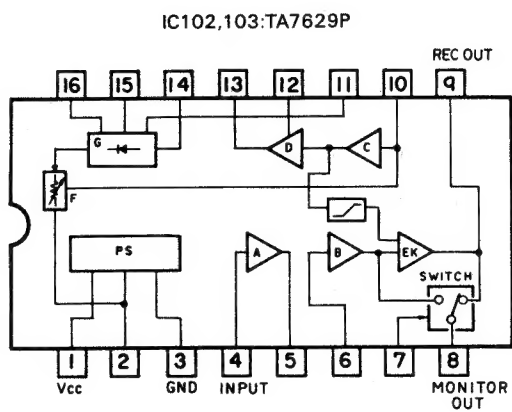
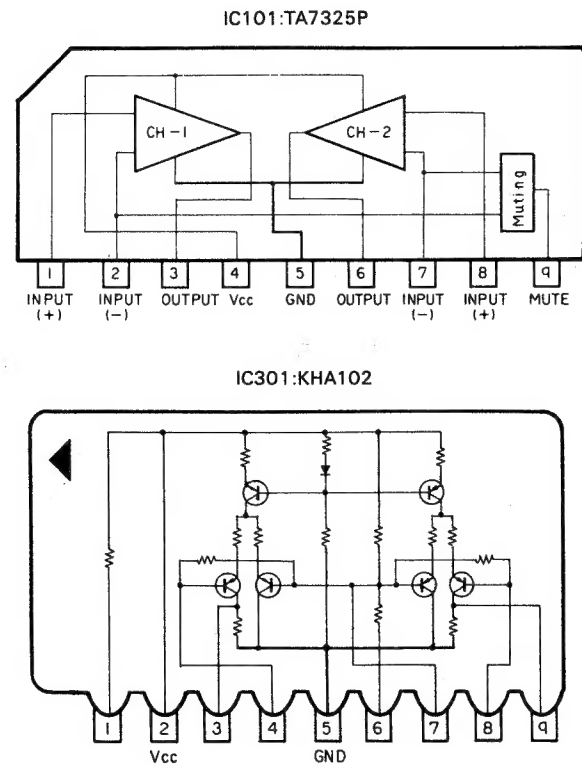
• Audio Unit



• IC's and Transistors



• Audio Unit



• Control Unit

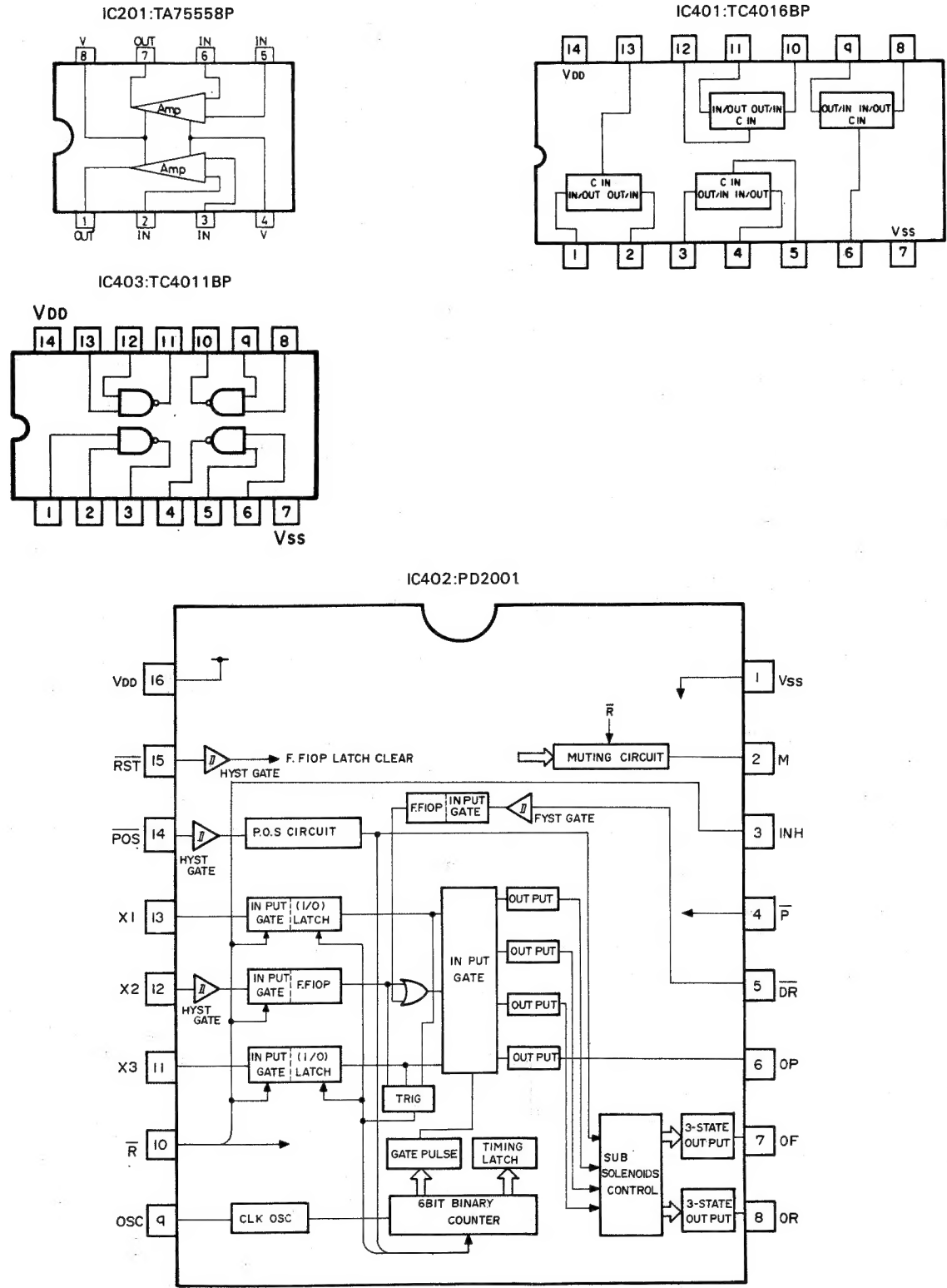
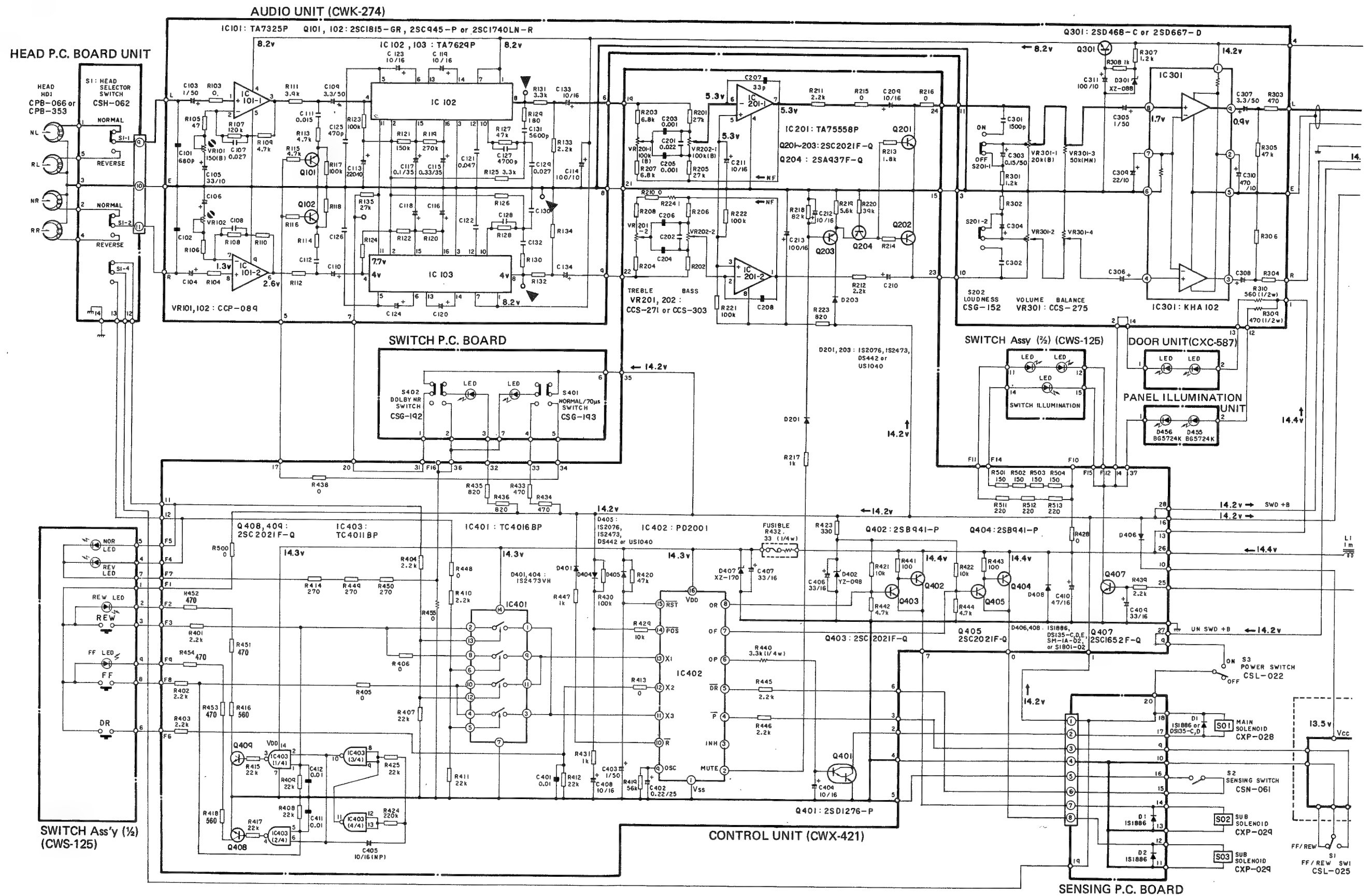
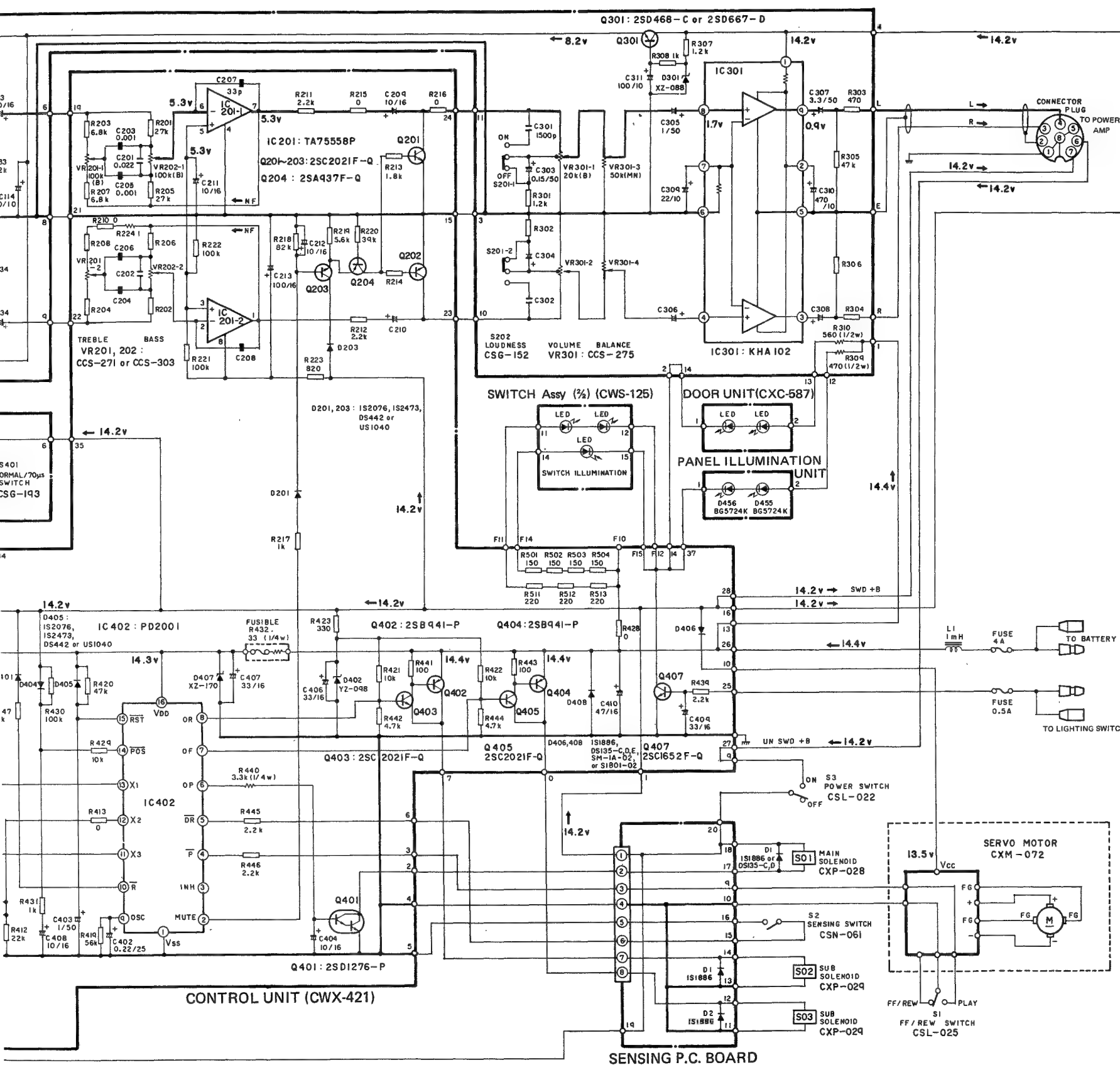


Fig. 11

6. SCHEMATIC CIRCUIT DIAGRAM





NOTE:

- Indicates a chip resistor
- Indicates a chip capacitor.

SWITCHES:

- HEAD P.C. BOARD UNIT**
 - S1 : HEAD SELECTOR SWITCHNORMAL - REVERSE
- SWITCH P.C. BOARD**
 - S401 : NORMAL/70μs SWITCHNORMAL - 70μs
 - S402 : DOLBY NR SWITCHON - OFF
- AUDIO UNIT**
 - S201 : LOUDNESS SWITCHON - OFF
- MISCELLANEOUS**
 - S1 : FF/REW SWITCHPLAY - FF/REW
 - S2 : SENSING SWITCHON - OFF
 - S3 : POWER SWITCHON - OFF

* The underlined indicates the switch position.

Fig. 12

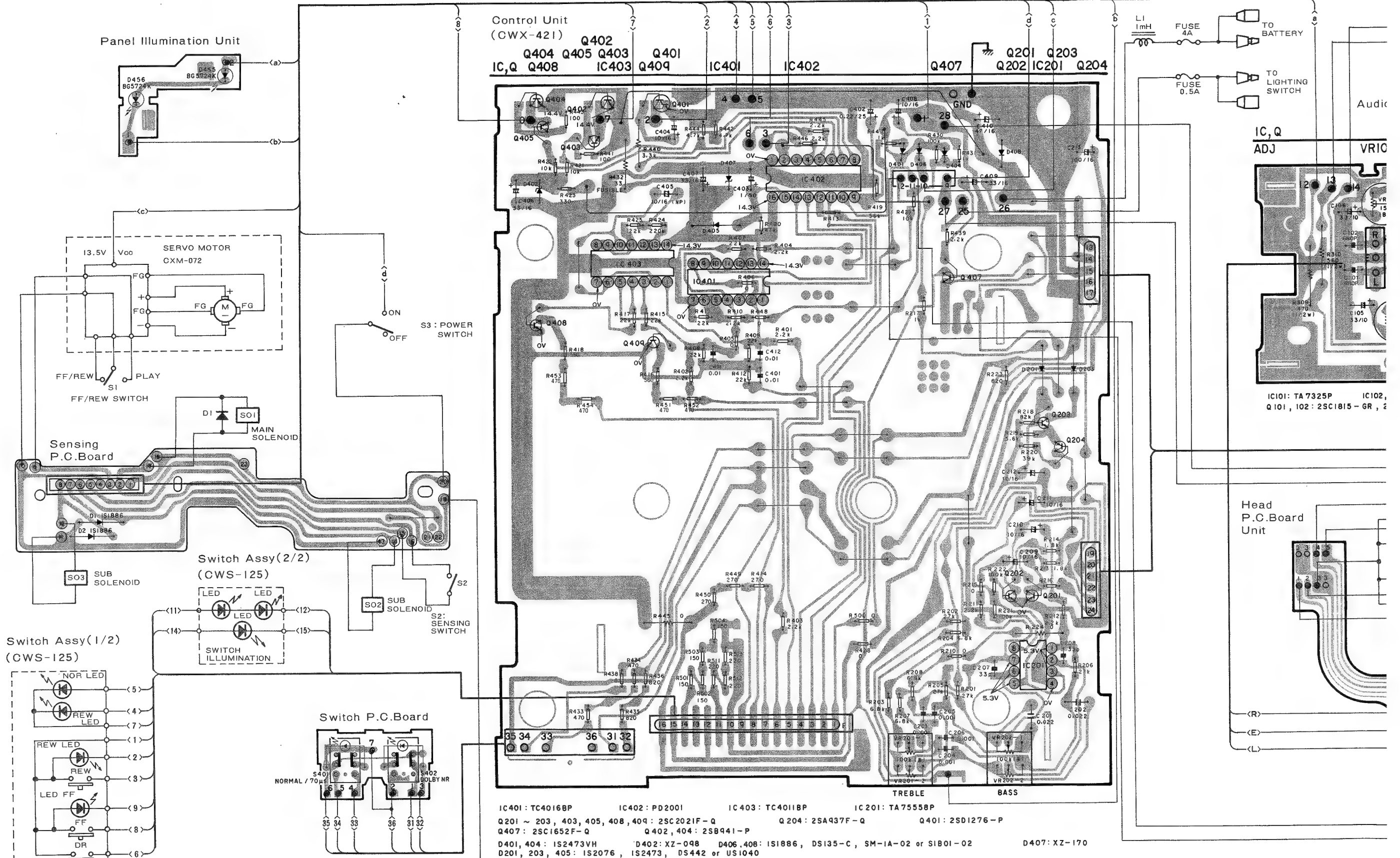
7. CONNECTION DIAGRAM

A

B

C

D



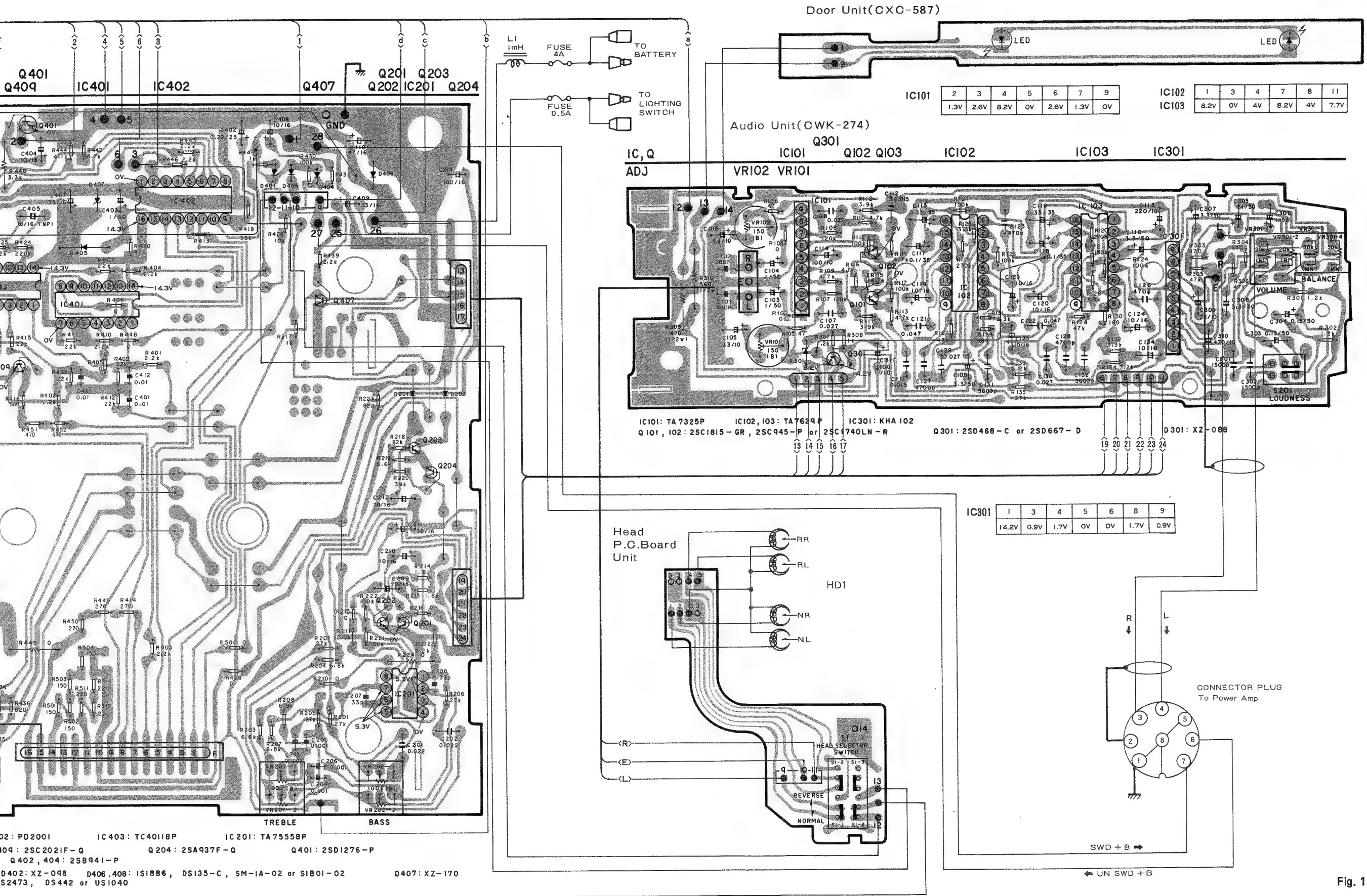
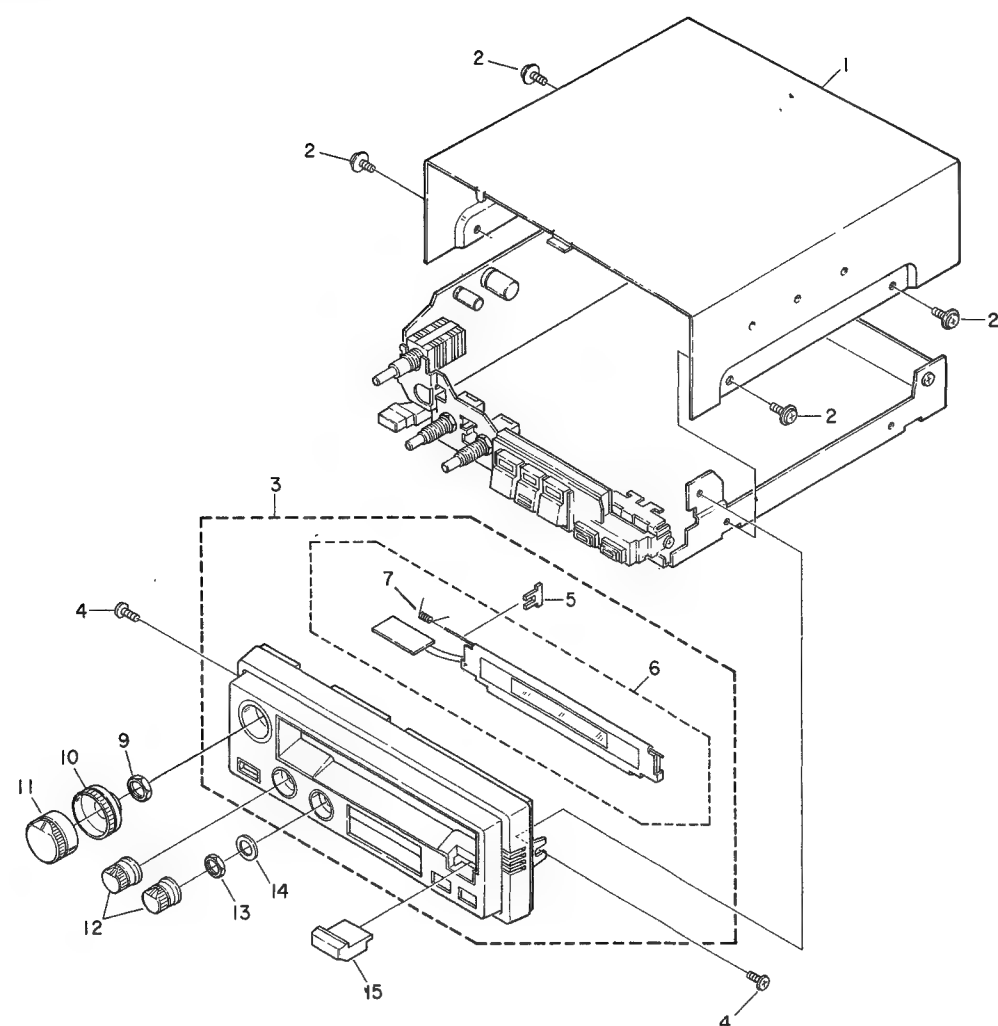


Fig. 13

8. CABINET EXPLODED VIEW



● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	CNB-675	Case		9.	CBA-067	Nut (M7)
	2.	BMZ30P050FBK	Screw	★	10.	CAA-394	Knob (BALANCE)
	3.	CXC-589	Grille Assy (KP-717G)		11.	CAA-393	Knob (VOLUME)
	4.	BMZ30P040FMC	Screw	★	12.	CAA-344	Knob (BASS, TREBLE)
	5.	CNE-516	Holder		13.	CBA-066	Nut (M6)
	6.	CXC-587	Door Unit		14.	CBF-091	Washer (M6)
	7.	CBH-549	Spring	★	15.	CAC-448	Button (EJECT)
	8.	VACANT					

Fig. 14

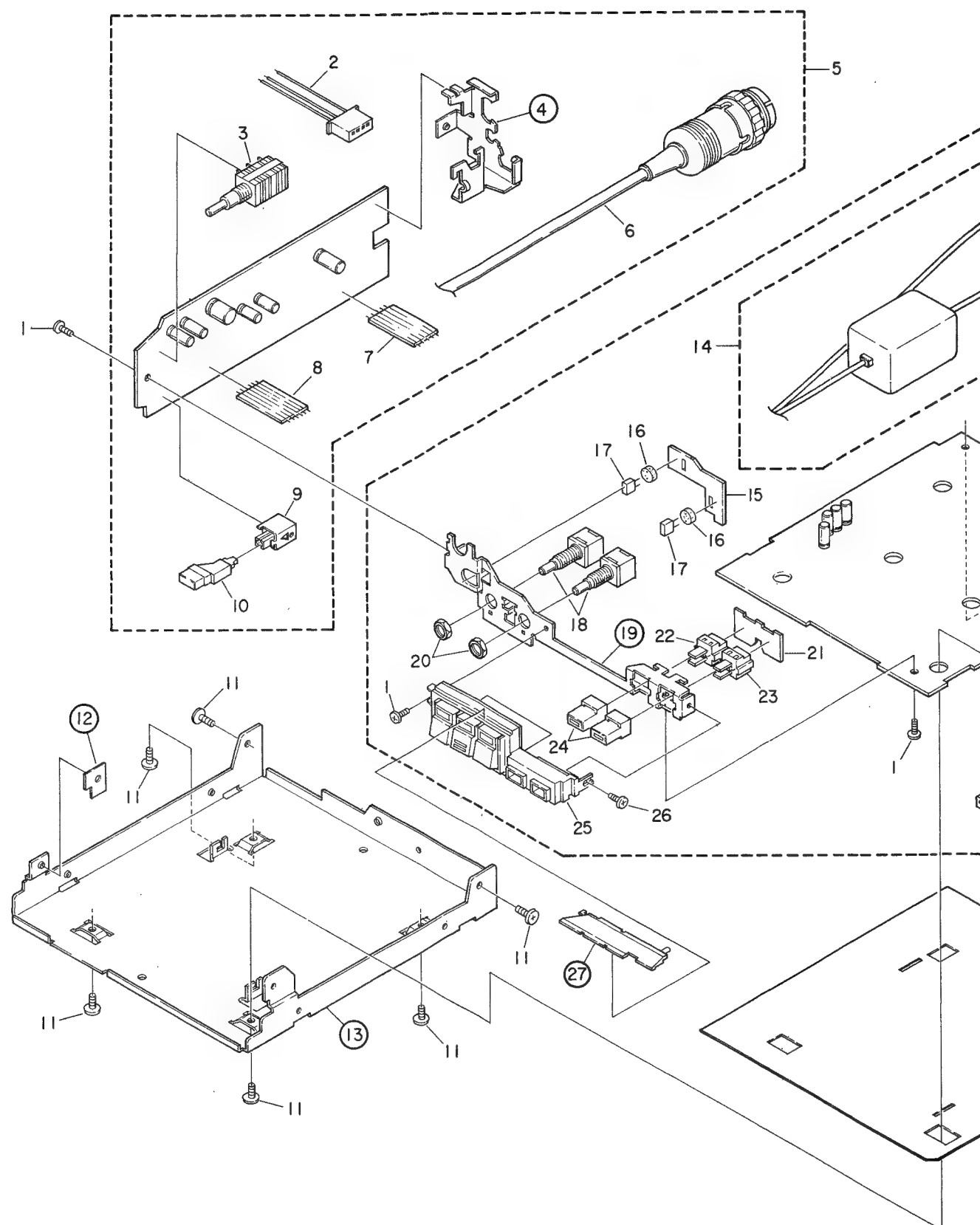
9. CHASSIS EXPLODED VIEW

A

B

C

D



1 2 3 4 5 6

9. CHASSIS EXPLODED VIEW

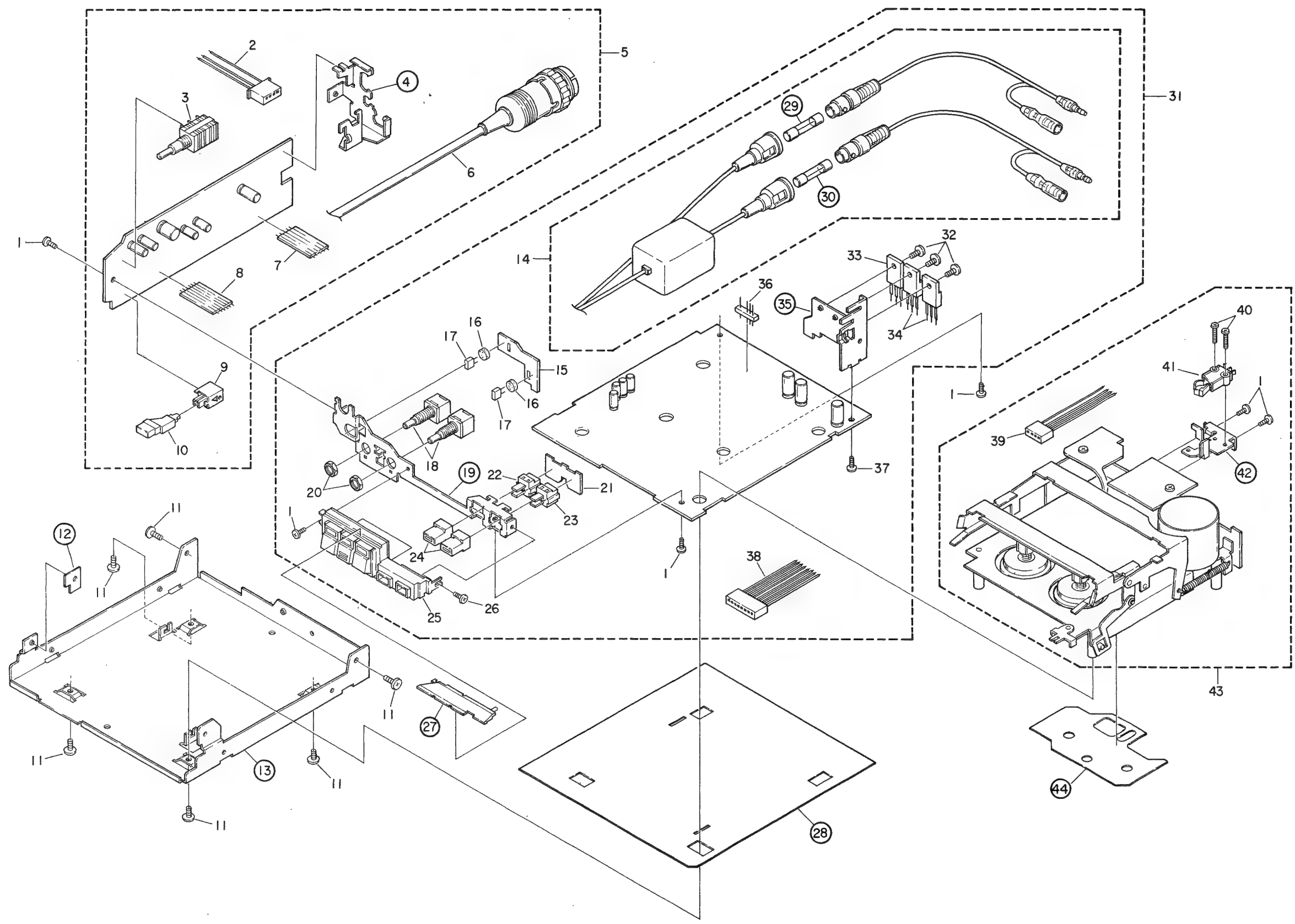


Fig. 15

● Parts List

NOTE

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★: GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	BMZ26P040FMC	Screw	★	24.	CAC-491	Button (DOLBY NR, NORMAL/70μs)
	2.	CDE-839	Connector (3P)	★★	25.	CWS-125	Switch Assy
★★	3.	CCS-275	Volume, 20kΩ(B), 50kΩ(MN) (VOLUME/BALANCE)		26.	BMZ26P030FMC	Screw
	4.		Holder		27.		Lens
	5.	CWK-274	Audio Unit		28.		Insulator
	6.	CDE-904	Connector		29.		Fuse, 0.5A
	7.	CDF-108	Connector (5P)		30.		Fuse, 4A
	8.	CDF-110	Connector (6P)		31.	CWX-421	Control Unit
★★	9.	CSG-152	Switch (LOUDNESS)		32.	BMZ30P050FMC	Screw
	10.	CAC-489	Button (LOUDNESS)	★★	33.	2SD1276	Transistor
	11.	BMZ30P040FHC	Screw	★★	34.	2SB941	Transistor
	12.		Insulator		35.		Heat Sink
	13.		Chassis		36.	CKS-094	Plug (4P)
	14.	CDF-104	Cord		37.	PMZ26P040FMC	Screw
	15.	CNL-196	P.C. Board		38.	CDF-111	Connector (8P)
	16.	CNV-724	Bush		39.	CDF-092	Connector (4P)
★	17.	BG5724K	LED (Panel Illumination)		40.	BMZ20P080FMC	Screw
★★	18.	CCS-271 or CCS-303	Volume, 100kΩ(B) (BASS, TREBLE)	★★	41.	CSL-022	Switch (POWER)
	19.		Holder		42.		Lever Unit
	20.	CBA-066	Nut (M6)		43.	CXC-546	Cassette Mechanism Assy
	21.	CNL-181	P.C. Board		44.		Insulator
★★	22.	CSG-192	Switch (DOLBY NR)				
★★	23.	CSG-193	Switch (NORMAL/70μs)				

10. CASSETTE MECHANISM EXPLODED VIEW(TOP)

● Parts List

NOTE

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

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This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	BMZ20P080FMC	Screw		37.	CXB-861	Lever Unit
★★	2.	CSL-025	Switch (FF/REW)		38.		Arm
	3.	BMZ26P030FMC	Screw		39.	CBH-536	Spring
	4.		Bracket		40.	CXB-862	Bracket Unit
	5-7.	VACANT			41.	CMZ26P040FMC	Screw
	8.	BMZ26P040FMC	Screw		42.	CNE-326	Lever
	9.	CNR-128	Bearing		43.	CNV-952	Arm
	10.	CXB-843	Gear Unit		44.	CNV-951	Arm
	11.	CNV-950	Gear		45.	CBH-553	Spring
	12.	CBF-045	Washer		46.	CBH-531	Spring
	13.	CBH-524	Spring		47.	CXB-853	Lever Unit
	14.	YE20FUC	Washer		48.	CNE-327	Lever
★★	15.	CXB-993	Roller Unit		49.	CNV-953	Arm
	16.	YE15FUC	Washer		50.		
	17.	CBH-560	Spring		51.	CXB-969	Arm Unit
	18.	CNV-947	Arm		52.	CLA-845	Bush
	19.	CXC-055	Lever		53.	CMZ26P060FMC	Screw
	20.	CNR-129	Bearing		54.	CLA-844	Bush
	21.	CXB-844	Gear Unit		55.		Arm
	22.	PMS20P040FMC	Screw		56.	CBH-535	Spring
	23.	CBA-082	Screw		57.	CXB-971	Holder Unit
★★	24.	CPB-066 or CPB-353	Head		58.	CBH-542	Spring
	25.	CBL-178	Spring	★★	59.	CBH-561	Spring
	26.	CNW-064	Rubber		60.	CXB-994	Roller Unit
	27.	CBH-528	Spring		61.	CNV-988	Lever
	28.	CBE-065	Washer		62.	CLA-846	Bush
	29.	CNV-987	Arm		63.	CBH-532	Spring
	30.	CXC-259	Head Base Unit		64.	CBH-537	Spring
	31.	CLA-831	Roller		65.	CXB-858	Bracket Unit
	32.		Cam		66.	CNL-192	P.C. Board
	33.	CBH-529	Spring		67.	CKS-052	Plug (3P)
	34.	CXB-852	Lever Unit	★★	68.	CSH-062	Switch (HEAD SELECTOR)
	35.		Chassis Unit		69.	BMZ26P040FMC	Screw
	36.	CXB-851	Lever Unit		70.	WH26FMC	Washer

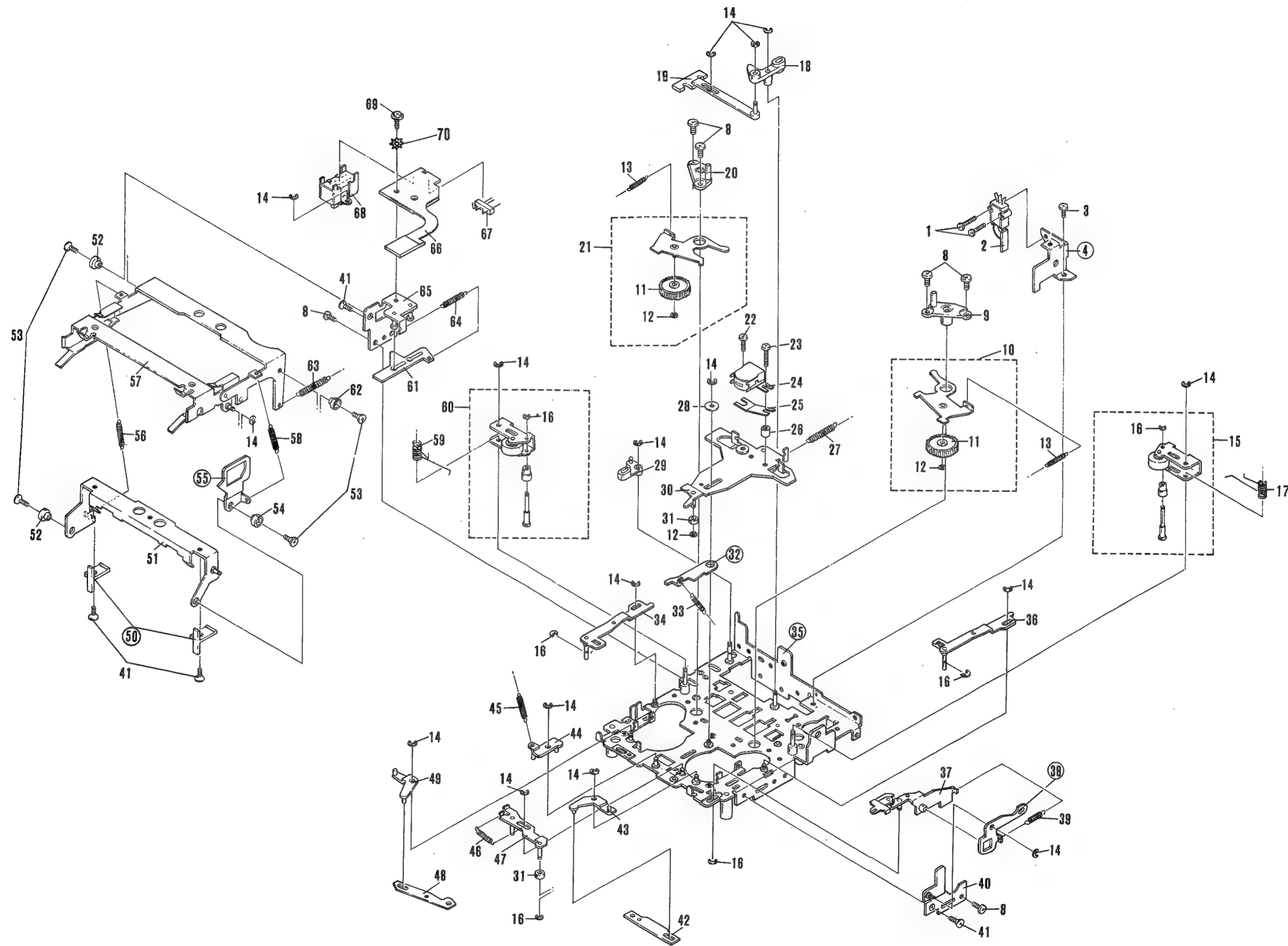
● Cassette Mechanism Exploded View (TOP)

A

B

C

D



A

B

C

D

Fig. 16

KP-717G

11. CASSETTE MECHANISM EXPLODED VIEW(BOTTOM)

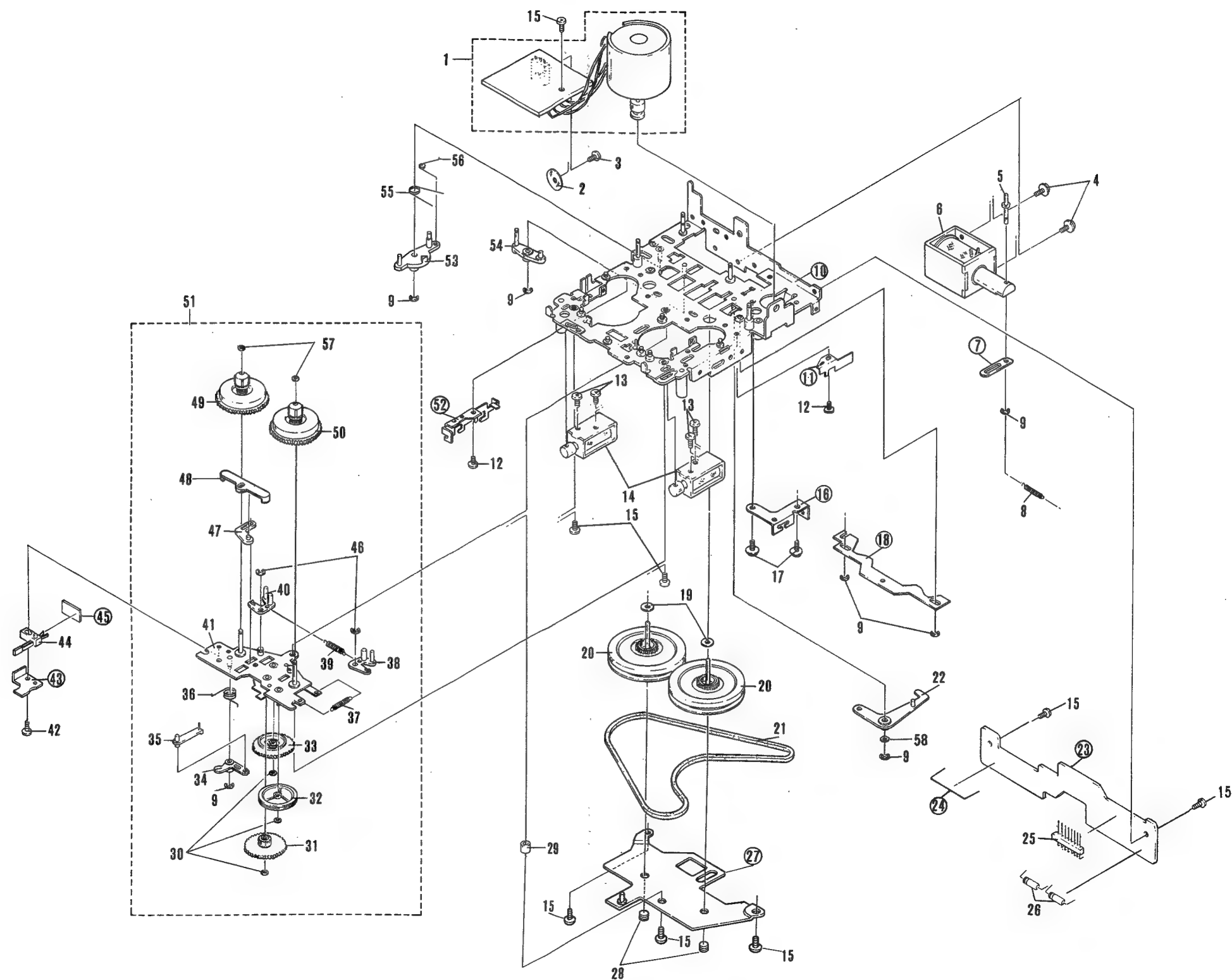


Fig. 17

● Parts List

NOTE

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
★★	1.	CXM-072	Motor		31.	CNV-955	Gear
	2.	CNM-513	Spacer		32.	CLA-914	Pulley
	3.	BMZ26P060FMC	Screw		33.	CNV-956	Gear
	4.	PMS26P040FMC	Screw		34.	CNV-962	Lever
	5.	CLA-825	Shaft		35.	CNV-959	Arm
★	6.	CXP-028	Solenoid		36.	CBH-521	Spring
	7.		Arm		37.	CBH-548	Spring
	8.	CBH-527	Spring		38.	CNV-960	Lever
	9.	YE20FUC	Washer		39.	CBH-520	Spring
	10.		Chassis Unit		40.	CNV-961	Lever
	11.		Bracket		41.	CXB-829	Sub Chassis Unit
	12.	BMZ26P030FMC	Screw		42.	BMZ20P080FMC	Screw
	13.	BMZ20P025FMC	Screw		43.		Cover
★	14.	CXP-029	Solenoid	★★	44.	CSN-061	Switch (SENSING)
	15.	BMZ26P040FMC	Screw		45.		P.C. Board
	16.		Bracket		46.	YE25FUC	Washer
	17.	PMS26P030FMC	Screw		47.	CNV-958	Lever
	18.		Cam		48.	CNV-957	Arm
	19.	CBF-111	Washer		49.	CXB-833	Reel Unit
	20.	CNR-130	Flywheel		50.	CXB-832	Reel Unit
★★	21.	CNT-083	Belt		51.	CXB-977	Sub Chassis Assy
	22.	CZC-073	Arm Unit		52.		Bracket
	23.		P.C. Board		53.	CNR-093	Arm
	24.				54.	CXB-919	Arm
	25.	CKS-054	Plug (8P)		55.	CBH-526	Spring
★	26.	IS1886	Diode		56.	CBH-525	Spring
	27.		Holder		57.	CBF-045	Washer
	28.	CNV-984	Screw		58.	CBE-077	Washer
	29.	CLA-817	Collar				
	30.	CBF-046	Washer				

12. ELECTRICAL PARTS LIST

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω 56 × 10¹ 561 RD1/4PS 5 6 1 J
 47kΩ 47 × 10³ 473 RD1/4PS 4 7 3 J
 0.5Ω 0R5 RN2H 0 R 5 K
 1Ω 010 RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62KΩ 562 × 10¹ RN1/4SR 5 6 2 1 F

- For your parts Stock Control, the fast moving items are indicated with the marks ★ ★ and ★.
- ★ ★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

Control Unit (CWX-421)

MISCELLANEOUS

Mark	Part No.	Symbol & Description
★★	TA75558P	IC201
★★	TC4016BP	IC401
★★	PD2001	IC402
★★	TC4011BP	IC403
★★	2SC2021F	Q201—Q203, Q403, Q405 Q408, Q409
★★	2SA937F	Q204
★★	2SD1276	Q401
★★	2SB941	Q402, Q404
	VACANT	Q406
★★	2SC1652F	Q407
★★	1S2076 or 1S2473 or DS442 or US1040 VACANT	D201, D203, D405 D202
★	1S2473VH	D401, D404
★	XZ-098	D402
	VACANT	D403
★	1S1886 or SIB01-02 or SM-1A-02 or DS135	D406, D408 D407
★★	CCS-271 or CCS-303	VR201, VR202 Volume, 100kΩ(B)

RESISTORS

Mark	Part No.	Symbol & Description
	RS1/8S□□□J	R201—R223, R401—R425, R428— R431, R433—R436, R438, R439, R441—R454, R500—R504, R511— R513 (Chip Resistor)
	HCN-106	R432 Fuse Resistor 33Ω(¼W)
	RD1/4PM □□□J	R224, R440
	VACANT	R426, R427, R437, R505—R510
	CCN-027	R455 0Ω

CAPACITORS

Mark	Part No.	Symbol & Description
	CAMA 223J 50L	C201, C202
	CKSYB 102K 50	C203—C206 Chip Capacitor
	CCSSL 330K 50	C207, C208 Chip Capacitor
	CEA 100M 16LL	C209—C212
	CEA 101M 16L	C213
	CKSYB 103K 50	C401, C411, C412 Chip Capacitor
	CEANL R22M 50L or	C402
	CSYA R22M 25SAN	
	CEA 010M 50L	C403
	CEA 100M 16L	C404, C408
	CEA 100M 16NP	C405
	CEA 330M 16L	C406, C407, C409
	CEA 470M 16L	C410

Audio Unit (CWK-274)
MISCELLANEOUS

Mark	Part No.	Symbol & Description
★★	TA 7325P	IC101
★★	TA 7629P	IC102, IC103
★★	KHA102	IC301
★★	2SC1815 or 2SC945 or 2SC1740LN	Q101, Q102
★★	2SD468 or 2SD667	Q301
★	XZ-088	D301
★★	CCP-089	VR101, VR102 Semi-fixed, 150Ω(B)
★★	CCS-275	VR301 Volume, 20kΩ(B), 50kΩ(MN) (VOLUME/BALANCE)
★★	CSG-152	S201 Switch (LOUDNESS)

RESISTOR

Mark	Part No.	Symbol & Description
	VACANT	R101, R102
	RS1/8S□□□J	R103-R135, R301-R308 Chip Resistor
	RS1/2S□□□J	R309, R310

CAPACITORS

Mark	Part No.	Symbol & Description
	CKSYB 681K 50	C101, C102
	CEA 010M 50L	C103, C104, C305, C306
	CEA 330M 10L	C105, C106
	CAMA 273J 50L	C107, C108, C129, C130
	CEA 3R3M 50L	C109, C110, C307, C308
	CAMA 153J 50L	C111, C112
	CEAH 221M 10L	C113
	CEA 101M 10L	C114, C311
	CSEA R33M 35	C115, C116
	CSEA R10M 35	C117, C118
	CEA 100M 16L	C119, C120, C124, C133, C134
	CAMA 473J 50L	C121, C122
	CEAH 100M 16L	C123
	CCDSL 471J 50L	C125, C126
	CAMA 472J 50L	C127, C128
	CAMA 562J 50L	C131, C132
	CAMA 152J 50L	C301, C302
	CEA R15M 50LL	C303, C304
	CEA 220M 10L	C309
	CEA 471M 10L	C310

Switch P.C. Board

Mark	Part No.	Symbol & Description
★★	CSG-193	S401 Switch (NORMAL/70μs)
★★	CSG-192	S402 Switch (DOLBY NR)

Head P.C. Board Unit

Mark	Part No.	Symbol & Description
★★	CSH-062	S1 Switch (HEAD SELECTOR)

Panel Illumination Unit

Mark	Part No.	Symbol & Description
★	BG5724K	D455, D456 LED

Sensing P.C. Board

Mark	Part No.	Symbol & Description
★	IS1886	D1, D2

Miscellaneous Parts List

Mark	Part No.	Symbol & Description
★★	CSL-025	S1 Switch (FF/REW)
★★	CSN-061	S2 Switch (SENSING)
★★	CSL-022	S3 Switch (POWER)
★★	CXM-072	M Motor
★	CXP-028	SO1 Main Solenoid
★	CXP-029	SO2, SO3 Sub Solenoid
★	IS1886 or DS135	D1
★★	CPB-066 or CPB-353	HD1 Head

13. PACKING METHOD

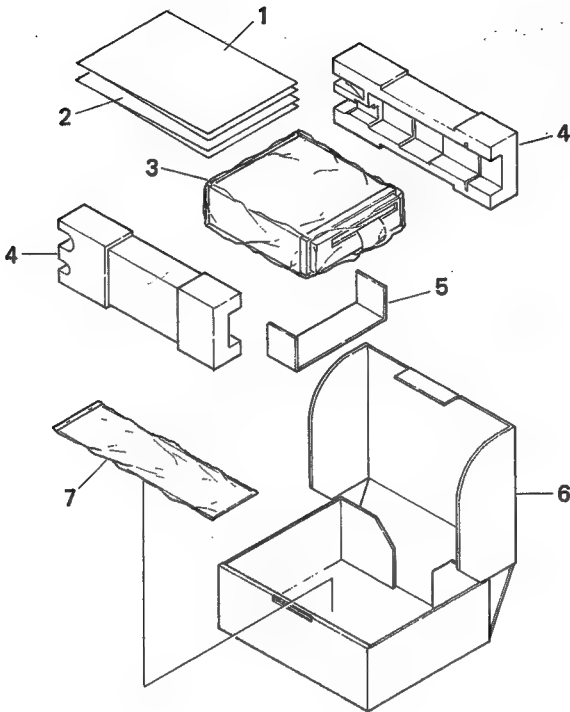


Fig. 18

- Parts List
- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	CRD-267	Owner's Manual (English, French, German, Spanish)		7-1.	CNF-111	Strap
					7-2.	CDE-437	Cord
					7-3.	CBA-028	Screw for Strap
	2.	CRD-268	Owner's Manual (Swedish, Norwegian, Dutch, Italian)		7-4.	CBA-101	Screw, M4 x 6
					7-5.	CBA-102	Screw, M5 x 16
					7-6.	B70-055	WN4φ x 4.5t
	3.	CEG-113	Cover		7-7.	B70-056	WN5φ x 5.3t
	4.	CHC-560	Styrofoam (1 set pair)		7-8.	WS40FMC	Washer
	5.	CNB-198	Mounting Bracket				
	6.	CHC-558	Carton				
	7.	CEA-466	Accessory Kit				

CX-118SM CX-118SV CX-118FV
CX-118SM/A CX-118SV/A CX-118FV/A

CASSETTE MECHANISM UNIT

SERVICE MANUAL *Original*

Subject:

This Service Manual deals with the CX-118SM ~ CX-118FV/A car stereo auto reverse cassette mechanisms. Check the number of the mechanism to verify which of the six mechanisms is being used before use. For parts which do not make up the cassette mechanism, refer to the service manual of the model concerned.

Model	Serial No.	Cassette Mechanism Unit
KP-575/U	26601 ~	CX-118SM
KP-575/C	02601 ~	CX-118SM
KP-575/E	30701 ~	CX-118SM
KP-77G/U	10701 ~	CX-118SV/A
KP-77G/C	00601 ~	CX-118SV/A
KP-77G/E	13501 ~	CX-118SV
KP-707G/U	11501 ~	CX-118FV/A
KP-707G/C	00001 ~	CX-118FV/A
KP-707G/E	10101 ~	CX-118FV
KP-4500/E	14001 ~	CX-118SM/A
KP-4800/E	07001 ~	CX-118SM/A
KP-4502/US	00001 ~	CX-118SM/A

Model	Serial No.	Cassette Mechanism Unit

MECHANISM DESCRIPTION

• Cassette loading

1. When the Cassette is inserted, Arm (A) moves in the arrowed direction. Pin (B) is for the cassette holder support arm. Arm (B), which is supported by the Pin (B), does not move together with Arm (A) (Fig. 1).

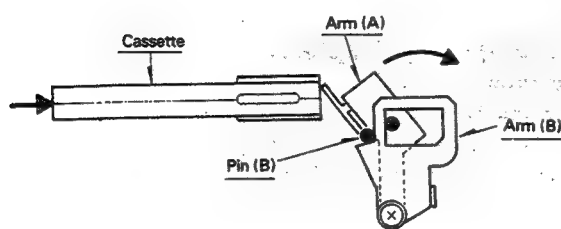


Fig. 1

2. With the cassette fully inserted, the Pin (A), attached to Arm (A), allows Arm (B) to rotate, and Pin (B), supported by Arm (B), disengages. Simultaneously, Arm (A) serves to actuate the Power Switch (Fig. 2).

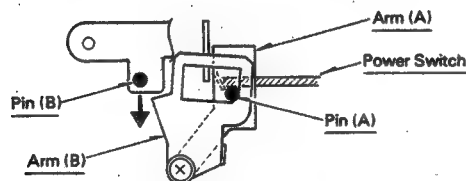


Fig. 2

3. As a result of the action in 1 and 2 above, Pin (B), through the tension of Spring (C), moves downward, causing the Cassette Holder to move in the same direction and complete loading (Fig. 3 and 4).

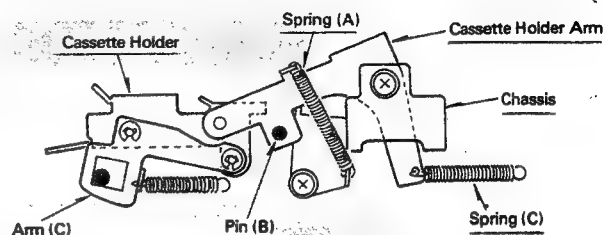


Fig. 3

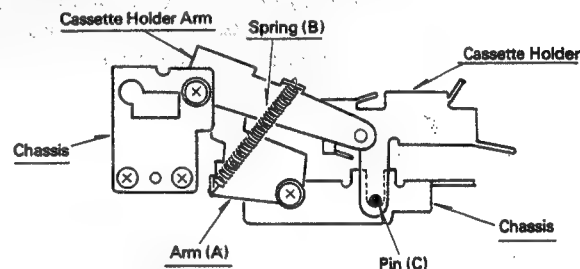


Fig. 4

• Eject mechanism

With Eject Lever (E) moved in the arrowed direction, the head base is unlocked (in a manner to be described later) causing Pin (D), attached to Lever (E) to turn Arm (C) upward. As a result, the cassette is ejected following the reverse order of actions 1 through 3 above (Fig. 5).

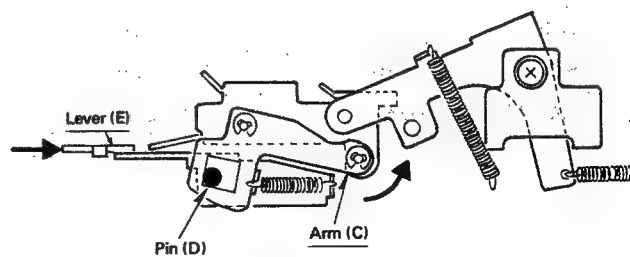


Fig. 5

• Tape tightening mechanism (Fig. 6)

1. The Flywheel and Pulley (A) are Belt driven by the Motor. The Reel Units are each driven by the gear connected to the Flywheel through the Idler. As seen in Fig. 6, the Capstan always rotates in the arrowed direction.

2. At the time the cassette is loaded, each Reel Unit rotates in the direction indicated by dotted line, inasmuch as the head base has yet to advance. Since the pinch roller is separated from the Capstan, the tape is wound at high speed on both reels, tape slack is taken up, and, sequentially, the sensing mechanism is activated.

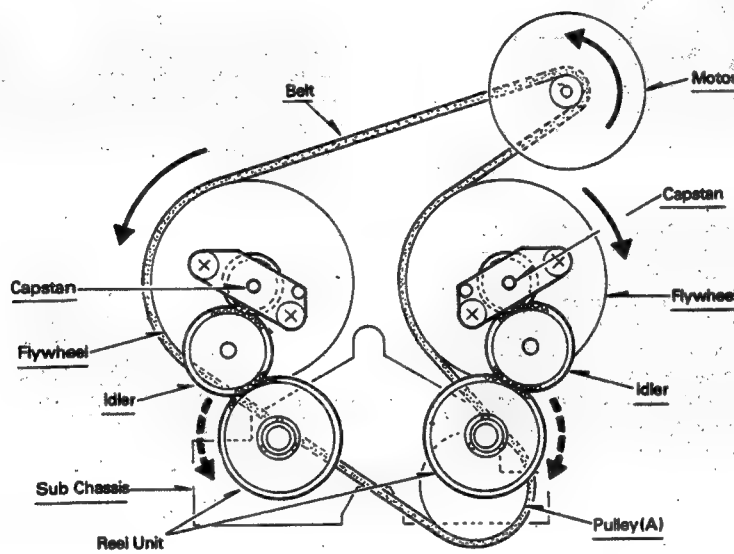


Fig. 6

• Anti-reel reversal mechanism (Fig. 7)

1. Claws (A) and (B) serve to prevent the Reel Units from reversing owing to difference in torque between them before the tape is wound up, and the sensing mechanism is activated.

2. Claw (A), while rotating in the arrowed direction together with the Reel Unit, flips Claw (B) protruding from Lever (B) to continue rotation. However, Claw (A), in reversing its rotation, is caught by Claw (B), with the result Lever (B) is turned toward the Chassis side

around Fulcrum (P). Pin (E) engages the Chassis to prevent Lever (B) from turning, causing reverse rotations, if any, to be brought to a stop within 180°.

3. In PLAY mode, the Head Base advances to rotate Lever (B) outside the Chassis so that it will not be caught by Claws (A) and (B). In F.F./REWIND, Pin (F) is made to rotate outside the Chassis by Arm (E), so that Lever (B) will not be caught by Claws (A) and (B).

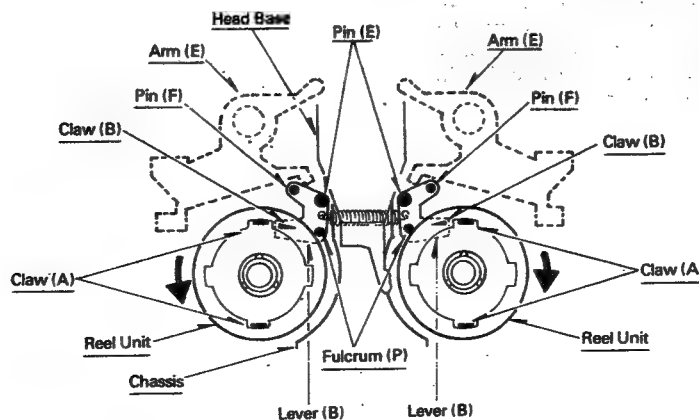


Fig. 7

MECHANISM DESCRIPTION

• Sensing mechanism

1. Gear (A) always rotates in the arrowed direction via Pulley (A) and another gear. Cam (A) and the Guide are secured to Gear (A) (Fig. 8).

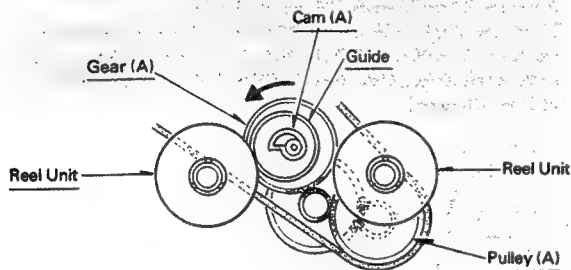


Fig. 8

2. Fulcrum (Q) is secured to the sub-chassis, and Arm (F) rotates together with the Reel Unit around the Reel Unit shaft via felt. Pin (G) is secured to Arm (F), Pin (H) to Lever (F), and Pin (I) to Arm (G), with each pin moving along the oval hole in its mate. With either of the Reel Units rotating, Arm (F) turns through friction. Since Arm (F) rotates either in the same direction or in the outward direction, Pin (H), which is connected to Arm (D) never fails to move upward (Fig. 9). And Lever (F), which is connected to Arm (D) via Pin (H), is thus applied through external force.

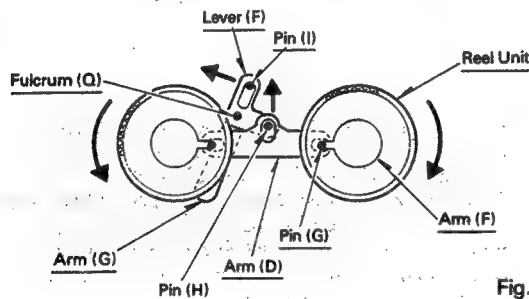


Fig. 9

3. As a result of the action of the Guide, Arm (G), at each rotation, moves toward the center of Gear (A). However, Lever (F) pushes Arm (G) in the circumferential direction of Gear (A), so there is no possibility of Cam (A) pushing Arm (G) downward (Fig. 10).

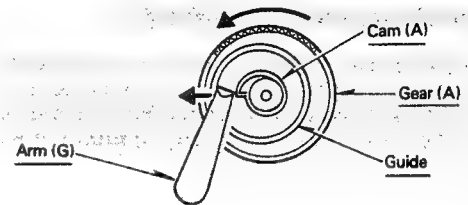


Fig. 10

4. When the reel units stop, Arm (G) is led by the Guide toward the center of Gear (A). However, Arm (G) to which a circumferential direction force is not applied is depressed by Cam (A), so that Lever (G) moves in the arrowed direction and presses the Main Solenoid Switch (Fig. 11).

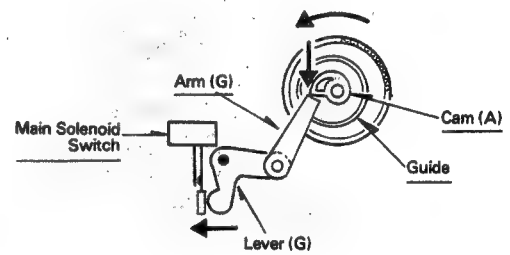


Fig. 11

5. With this, Auto Reverse, F.F./REWIND or cassette loading can be switched from the state of tape being tightened to PLAY mode.

• Head base advance mechanism (CX-118SM, 118SV, 118SM/A, 118SV/A)

1. With activation of the sensing mechanism, the main solenoid switch is turned on, so that Arm (I) is rotated counterclockwise and pushes Pin (J), which is attached to the head base. Simultaneously, Arm (I) depresses the FF/REW Switch which is designed to vary the motor speed. When Arm (I) is disengaged, the motor speed is set for fast forward and rewind operations, and when depressed, the speed is set for tape play. Arm (K), attached to the Main Solenoid, is provided with an oval hole for purpose of rotating, and is returned to its normal position by Spring (E) (Fig. 12).

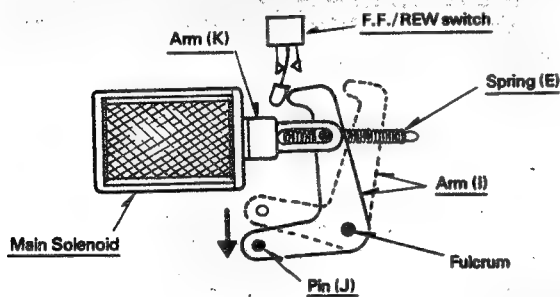


Fig. 12

2. The Head Base moves downward, as shown in Fig. 13, and is locked by Arm (J) and the Roller mounted on the Head Base. In F.F./REWIND and Ejection, Lever (C) moves left to disengage Arm (J) so that the Head Base is unlocked for return to its normal position by Spring (D).

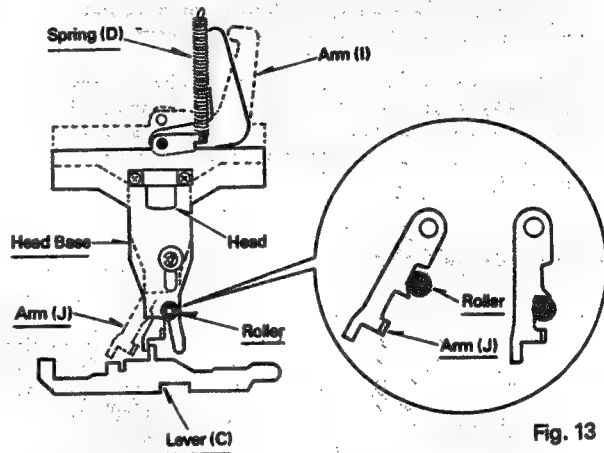


Fig. 13

• Head base advance mechanism (CX-118FV, 118FV/A)

1. With activation of the sensing mechanism, the main solenoid switch is turned on, so that Arm (I) is rotated counterclockwise and pushes Pin (J), which is attached to the head base. Simultaneously, Arm (I) depresses the FF/REW Switch which is designed to vary the motor speed. When Arm (I) is disengaged, the motor speed is set for fast forward and rewind operations, and when depressed, the speed is set for tape play. Arm (K), attached to the Main Solenoid, is provided with an oval hole for purpose of rotating, and is returned to its normal position by Spring (E) (Fig. 14).

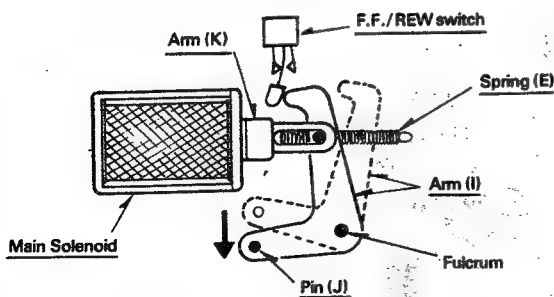


Fig. 14

2. The Head Base moves downward, as shown in Fig. 15, and is locked by Arm (J) and the Roller mounted on the Head Base. In F.F./REWIND and Ejection, Lever (I) moves left to disengage Arm (J) so that the Head Base is unlocked for return to its normal position by Spring (D).

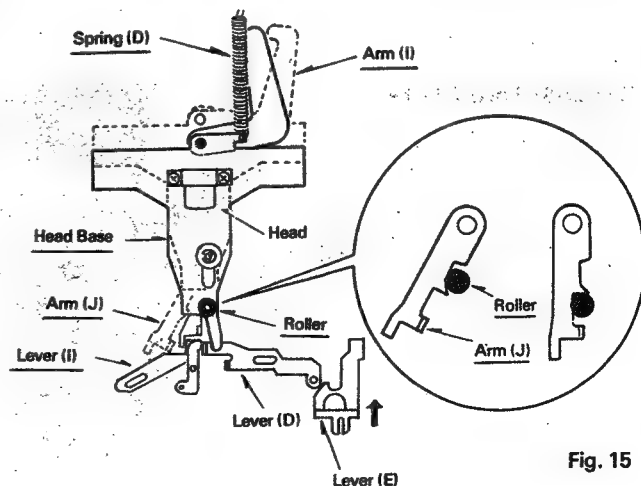


Fig. 15

MECHANISM DESCRIPTION

• Auto Reverse mechanism (Fig. 16 and 17)

1. When the sensing mechanism is activated with the Head Base advanced, the pin at the end of the main solenoid causes Arm (O) to rotate so that Lever (H) is attracted.
2. Lever (H) engages either Pin (K) or (L), attached to Arm (L), to cause Arm (L) to rotate. Pin (L) engages the groove of Cam (F), so that Cam (F) moves right and left to rotate Arm (N) and cause the Arm (E) to move vertically, and stop the rotation on either side of the Reel Units.
3. Cam (F) contacts Pin (M), which is attached to the Pinch Roller Unit. Pin (M), through the pressure of Spring (G), with the claw protruding toward the Head Base as its stopper, is provided with constant downward force.
4. Pin (M), via Cam (F), moves vertically to control the contact of the Capstan on one side with the Pinch Roller.
5. Spring (F), mounted to the rotating shaft of Arm (L) via the protrusion (A) of Arm (L), rotates in the same direction as Arm (L) to store sufficient force to move Arm (M).
6. Said force, when Lever (H) rotates Arm (L) and is returned to its normal position (when the Lever (H) engages neither Pin (L) or (K), affects the oval hole on Lever (H) to incline the Lever (H) toward the opposite side.

NORMAL DIRECTION

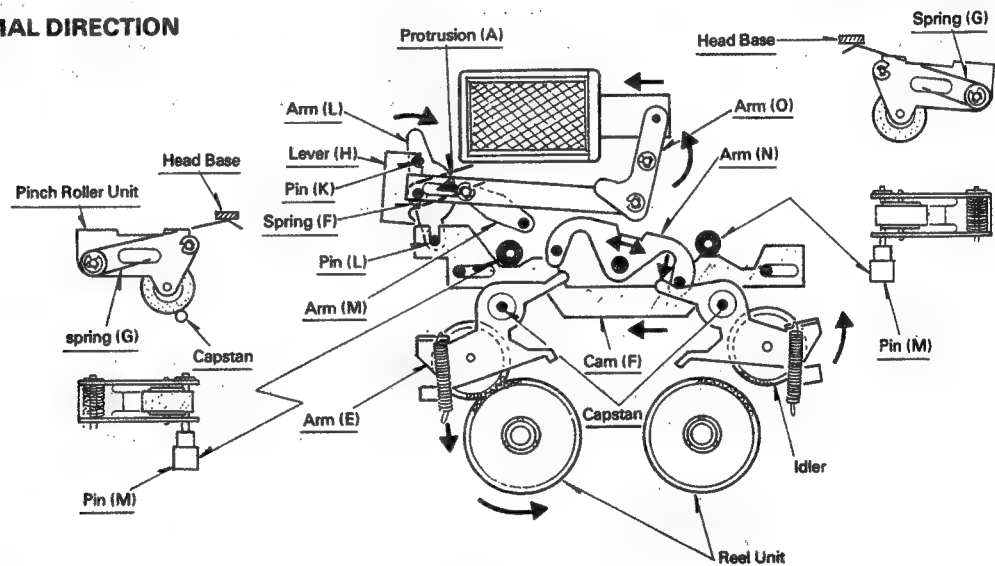


Fig. 16

REVERSE DIRECTION

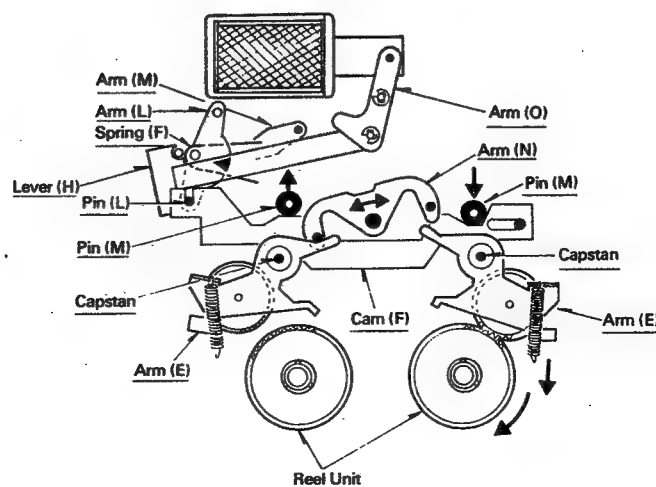


Fig. 17

MECHANISM DESCRIPTION CX-118

- Pin (K) of Arm (L), which engages Arm (P), acts to operate the head selector switch, thus activating the Auto Reverse mechanism in the manner described above (Fig. 18).

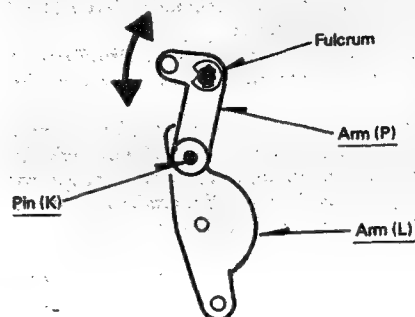


Fig. 18

• F.F./REWIND mechanism (CX-118SM, 118SV, 118SM/A, 118SV/A)

- The left-right movement of Crank causes right-left movements of Cam (G). Lever (A) is pushed by the tapered sections at both ends of the upper side of Cam (G) (Fig. 19).
- Lever (A) causes Arm (E) to rotate and separate the idle gear on one side from the Reel Units, simultaneously making Lever (B) rotate and disengage Claws (A) and (B), which are designed to prevent the Reel Units from reversing (Fig. 19).

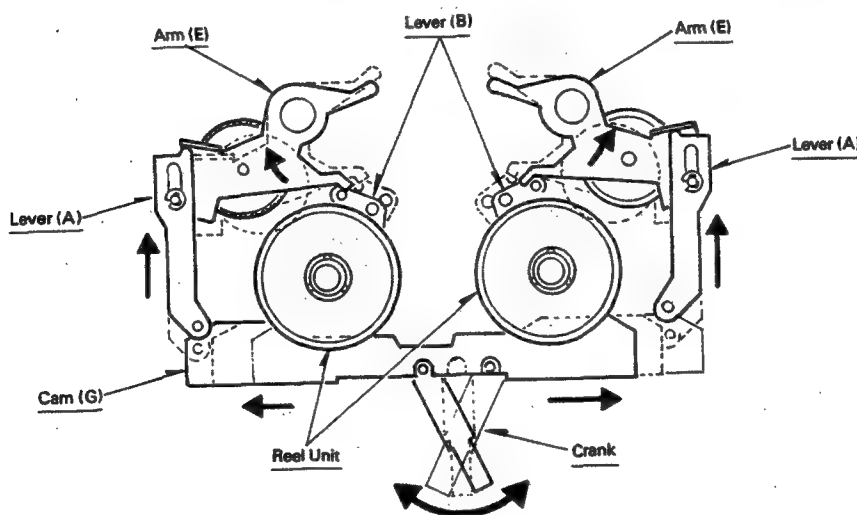


Fig. 19

MECHANISM DESCRIPTION

3. With Cam (G) moving right or left, Arm (Q), through the pressure of Spring (H), is pushed toward the upper side in the figure to strike the bottom of the tapered section of Cam (G) and is locked.
4. With Crank returned to center position, the Roller of Arm (Q) rolls over the tapered section to unlock Arm (Q) (Fig. 20).
5. With this, Levers (C) and (J), under pressure of Spring (I), are returned to their normal positions and strike the protrusion of Crank so that their center position is maintained. Roller (C) is positioned at the end of Arm (Q) to force it downward in the figure and unlock.

6. Shifting of Crank during PLAY causes the protrusion of Lever (C) to push Arm (J), so that the Head Base is unlocked.
7. Also, with Eject Lever (E) pushed, Lever (C), through Roller (B), moves left to unlock the Head Base.
8. At the end of F.F./REWIND, the sensing mechanism is activated and advances the Head Base, with the result Arm (Q) is pushed toward the lower side in the figure by the end of the Head Base to bring F.F./REWIND to a stop (Fig. 20).

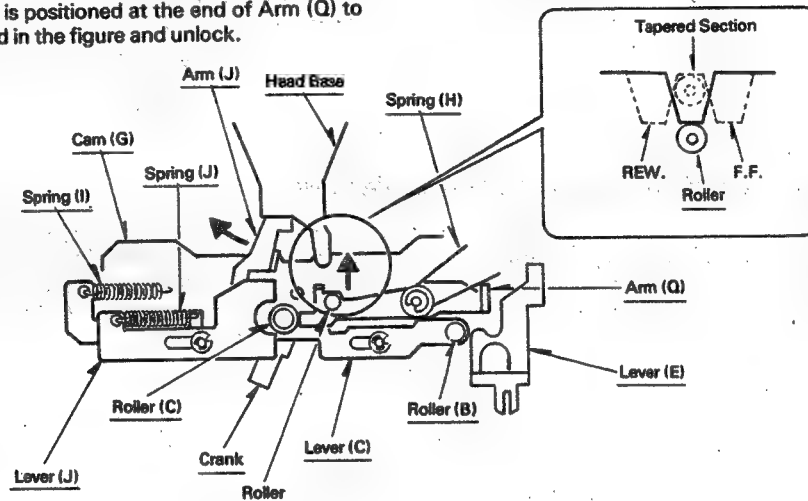


Fig. 20

• F.F./REWIND mechanism (CX-118FV, 118FV/A)

1. When the Sub Solenoid in Fig. 21 is activated, Lever (L) which is coupled with the Sub Solenoid and Pin (N) is attracted.
2. Lever (L) causes Arm (E) to rotate, the Idle Gear is disengaged from the Reel Unit, Lever (B) is simultaneously made to rotate, and Claws (A) and (B) for preventing the Reel Unit from reversing are freed.
3. When Lever (L) is attracted, Lever (I) moves in the direction of the arrow via Arm (H), Arm (J) is attracted and the Head Base is released.
4. When the Sub Solenoid in Fig. 22 is activated, Lever (K) which is coupled with the Sub Solenoid and Pin (N) is attracted.

5. Lever (K) causes Arm (E) to rotate, the Idle Gear is disengaged from the Reel Unit, Lever (B) is simultaneously made to rotate, and Claws (A) and (B) for preventing the Reel Unit from reversing are freed.
6. When Lever (K) is attracted, Lever (I) moves in the direction of the arrow via Arm (S), Lever (J) and Arm (R), Arm (K) is depressed, and the Head Base is released.
7. The above operations permit the tape to be set to the F.F. and REWIND modes.

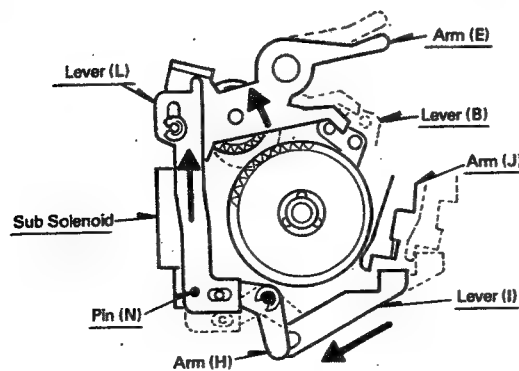


Fig. 21

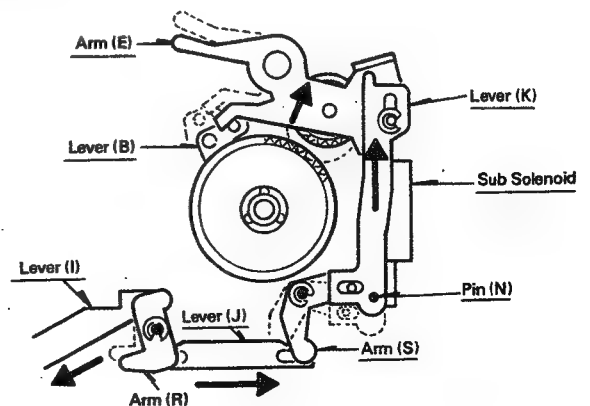


Fig. 22

• Sensing mechanism deactivator (CX-118SM, 118SV, 118SM/A, 118SV/A)

With Eject Lever (E) pushed, Arm (T), through the pressure of Spring (K), moves in the direction shown by arrow in the figure and pushes Arm (G) so that the sensing mechanism is deactivated. With Eject Lever (E) returned to its normal position, Arm (T), through Arm (S), is separated from Arm (G) (Fig. 23).

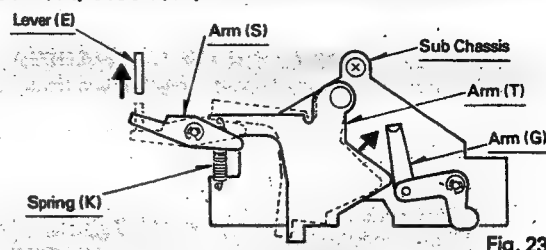


Fig. 23

- **Sensing mechanism deactivator (CX-118FV, 118FV/A)**

With Eject Lever (E) pushed, Arm (T), through the pressure of Spring (K), moves in the direction shown by arrow in the figure and pushes Arm (G) so that the sensing mechanism is deactivated. With Eject Lever (E) returned to its normal position, Arm (T), through Lever (D), is separated from Arm (G) (Fig. 24).

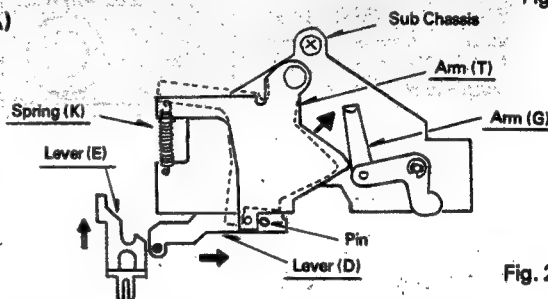


Fig. 24

ADJUSTMENT

TAPE SPEED ADJUSTMENT
(CX-118SM, ~~118SV~~, 118SM/A, ~~118SV/A~~)

Tape speed can be adjusted by replacing the motor pulley. Three types of pulleys differing in diameter available as shown in the table below. The pulley surface has either one groove, two grooves or no groove to help distinguish the diameter (Fig. 25).

Diameter	Parts No.	No. of Grooves
11.59 mm.	CXB-996	None
11.72 mm	CXB-997	One
11.85 mm	CXB-998	Two

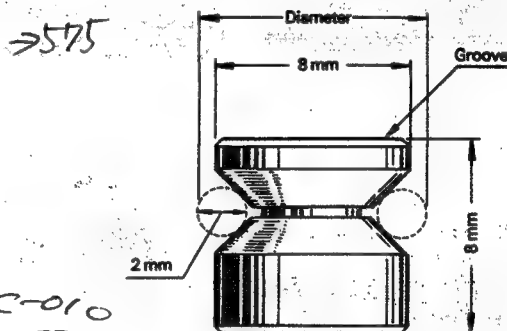


Fig. 25

TAPE SPEED ADJUSTMENT (CX-118FV, 118FV/A) (CX-118SV, 118SV/A)

The tape speed can be adjusted by increasing or reducing the resistance of the semi-fixed resistor. When the semi-fixed resistor in the figure is rotated clockwise, this speed is increased; when it is rotated counterclockwise, it is reduced. (Fig. 26).

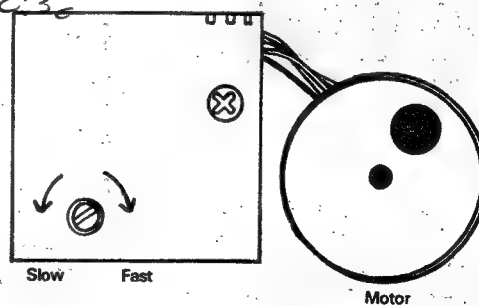


Fig. 26

AZIMUTH ADJUSTMENT

1. Connect VTVM and the speaker (4 Ω) to the green and gray leads, respectively. Connect the red lead to a DC regulated power supply and apply 13.8V.
2. Insert a 333 Hz (STD-341) test tape. With balance set at medium and tone at maximum, turn volume for an output reading of 0 dB.
3. Insert a 10 kHz (STD-341) test tape.
4. Turn the azimuth adjusting screw so the outputs of Lch and Rch are maximized symmetrically both in normal and reverse directions (Fig. 27).

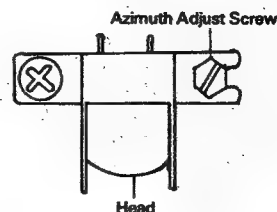
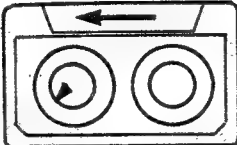
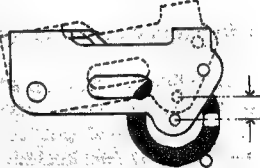
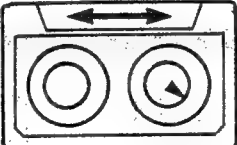
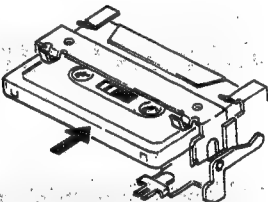
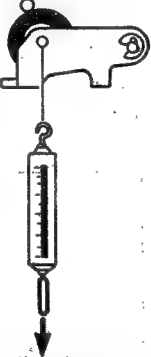
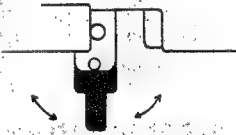
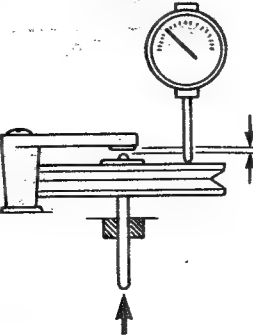
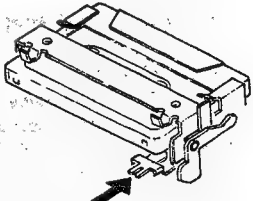


Fig. 27

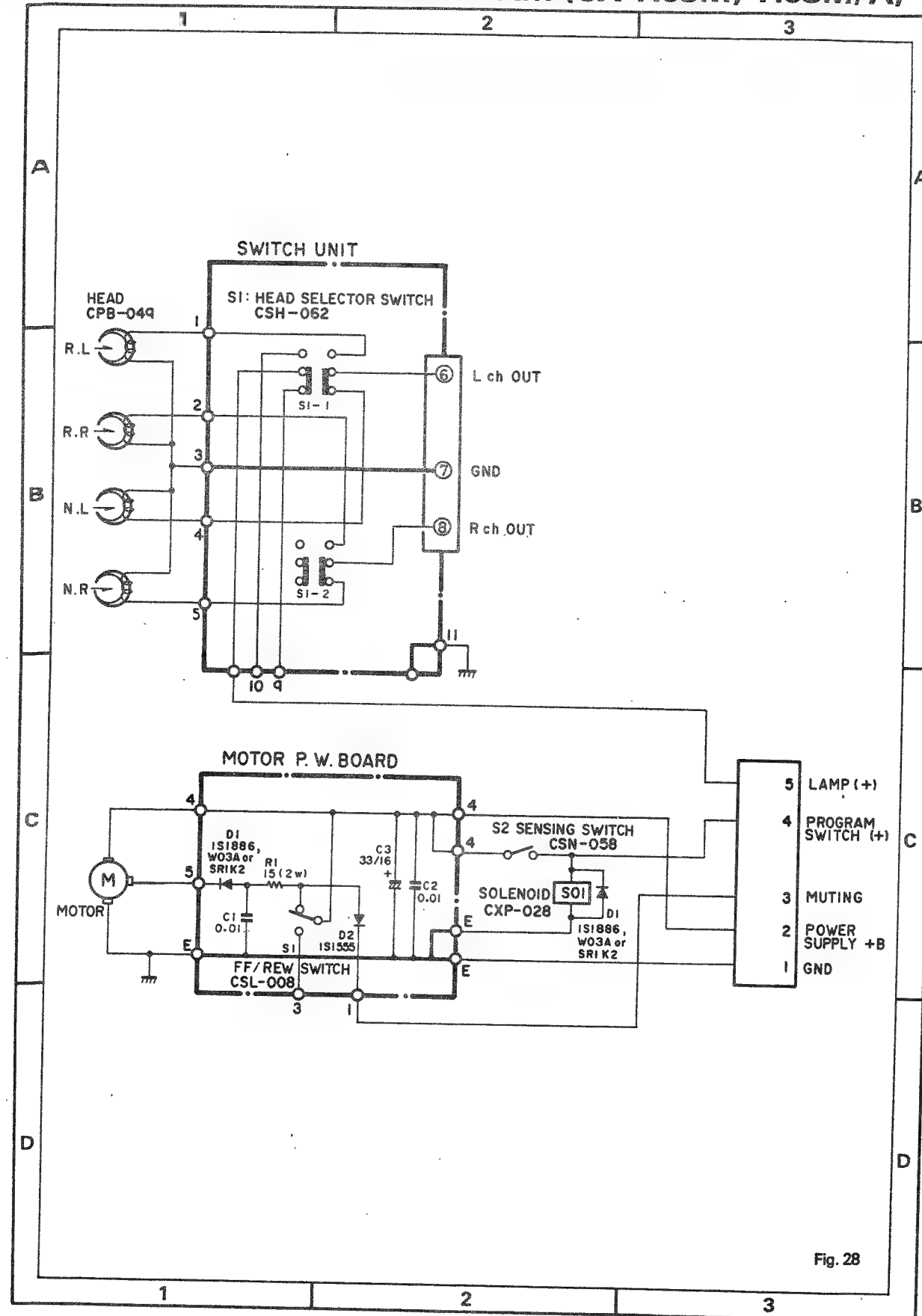
ADJUSTMENT

CHECK POINTS OF CASSETTE MECHANISM

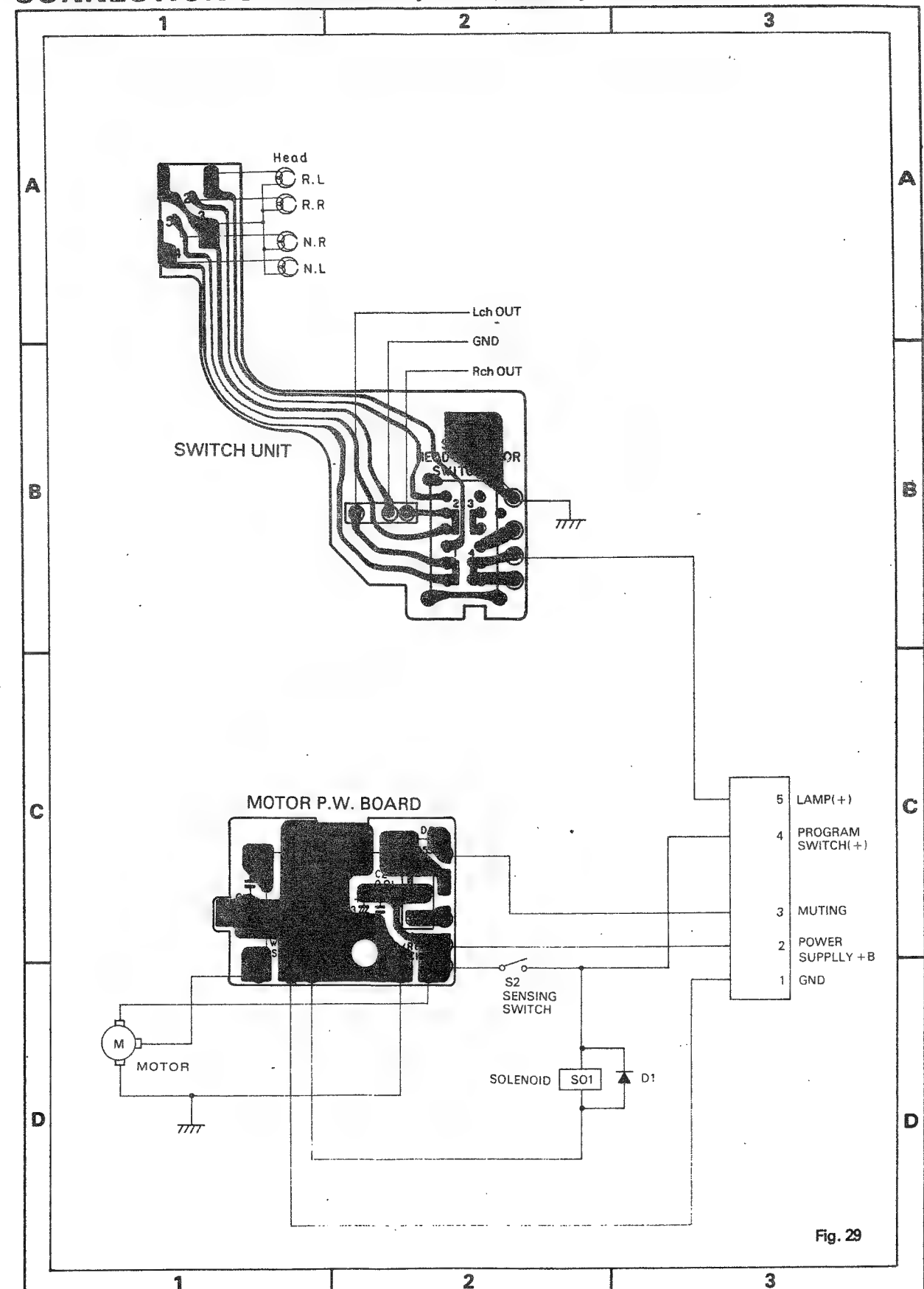
When replaced or repaired cassette mechanism parts, refer to values in the following table.

<p>(1) Wind torque Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 50~70g/cm.</p> 	<p>(5) Pinch roller travel Use a slide calipers to ascertain that the distance between the position of the center shaft at the time the pinch roller contacts the capstan and that at the time the capstan has gone away from the pinch roller should be at least 0.8 mm when the tape is playing in the reverse direction and at least 4.3 mm when it is F.F./REWIND.</p> 
<p>(2) F.F. and rewind torque Take measurement for 5~6 seconds using a cassette torque meter (120g/cm) to make sure torque is 50g/cm or more.</p> 	<p>(6) Cassette loading force Using tension gauge (1 kg) at the center of the cassette, check to make sure the indication is less than 600 g.</p> 
<p>(3) Pinch roller press adhesion force Measure using a tension gauge (500g) to make sure the load is 210~290g with the pinch roller starting to rotate in contact with the capstan shaft.</p> 	<p>(7) F.F./REWIND set and release force With a tension gauge (1 kg) pushed in the arrowed direction, make sure F.F./REWIND will lock at less than 800 g and release at less than 600 g.</p> 
<p>(4) Clearance between flywheel and flywheel bracket Set a dial pick gauge as shown in the figure, and check to make sure the difference is between 0.05 mm and 0.25 mm, when the flywheel is applied with pressure in the arrowed direction.</p> 	<p>(8) Eject force Using tension gauge (3 kg) in the arrowed direction, check to make sure the indication is less than 3 kg.</p> 

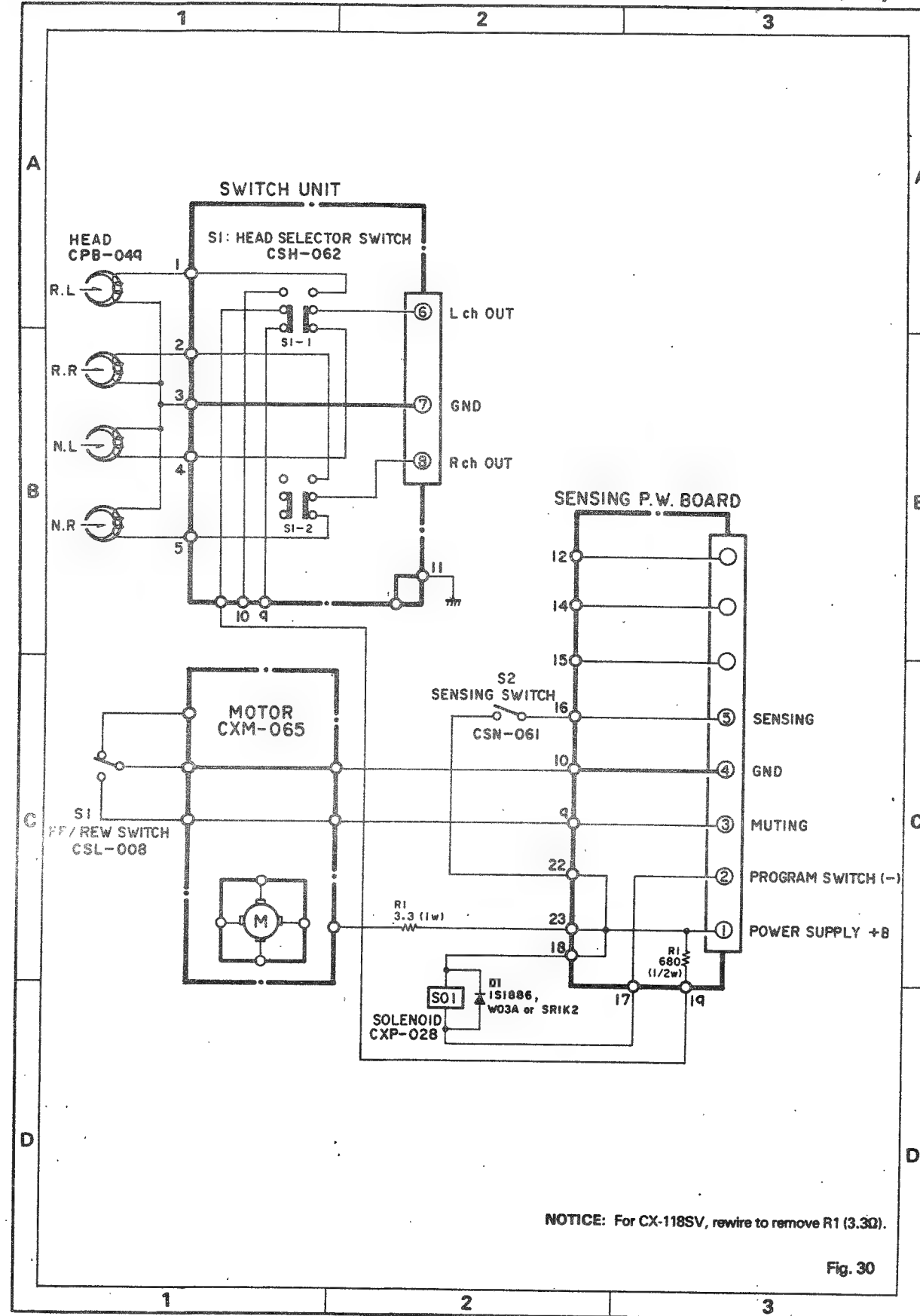
SCHEMATIC CIRCUIT DIAGRAM (CX-118SM, 118SM/A)



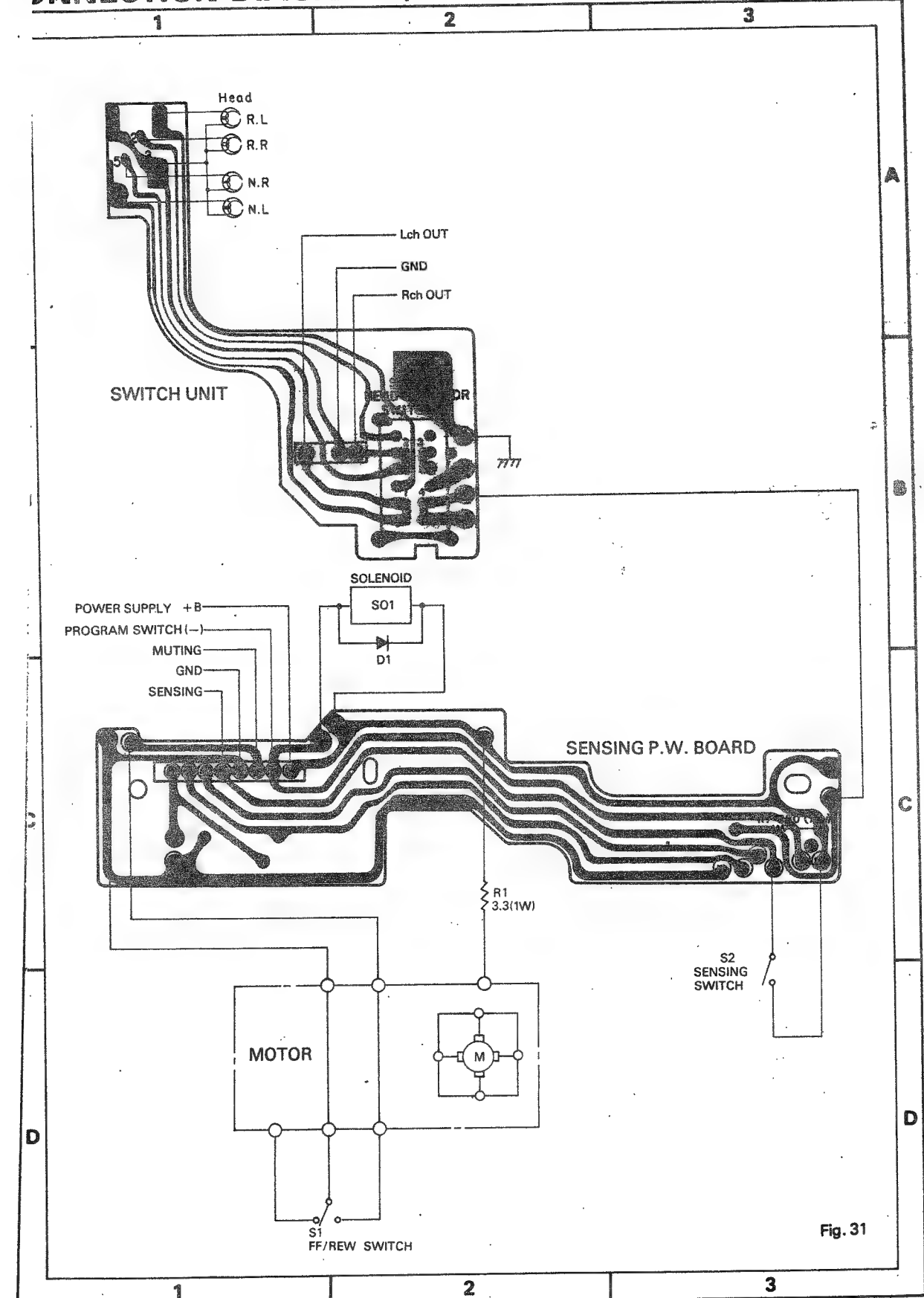
CONNECTION DIAGRAM (CX-118SM, 118SM/A)



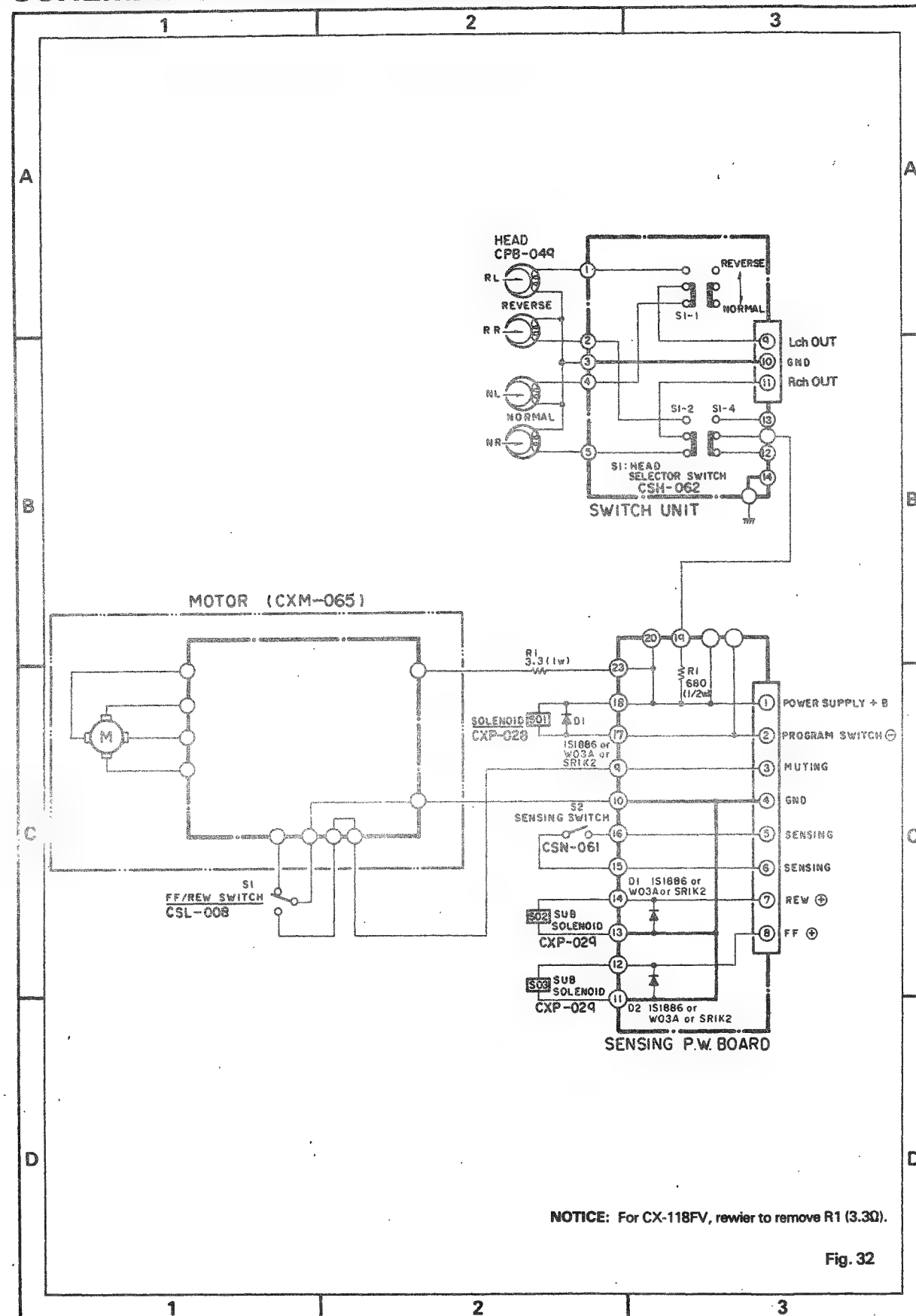
SCHEMATIC CIRCUIT DIAGRAM (CX-118SV, 118SV/A)



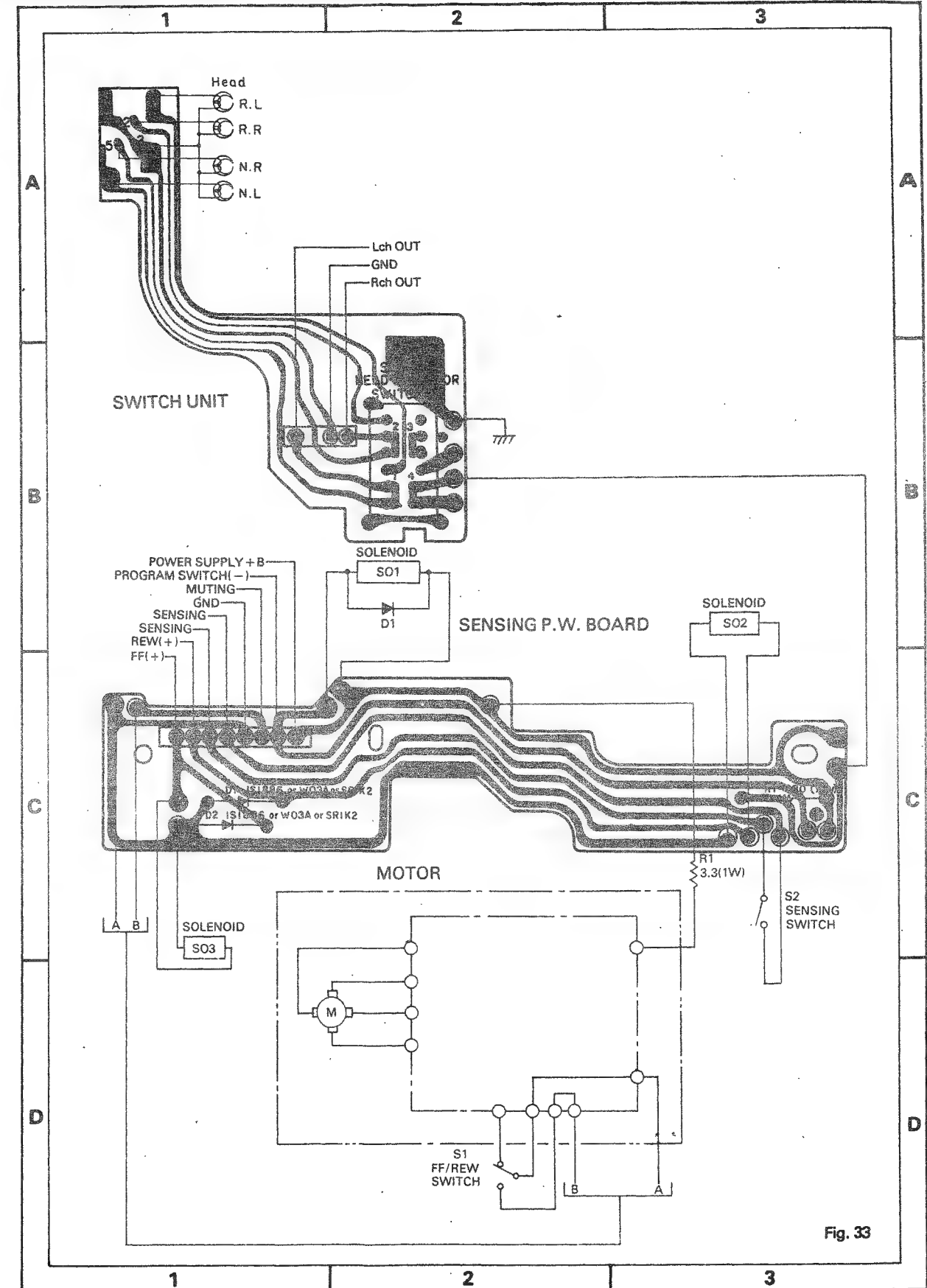
CONNECTION DIAGRAM (CX-118SV, 118SV/A)



SCHEMATIC CIRCUIT DIAGRAM (CX-118FV, 118FV/A)



CONNECTION DIAGRAM (CX-118FV, 118FV/A)



EXPLODED VIEW (TOP)(CX-118SM,118SV,118SM/A,118SV/A)

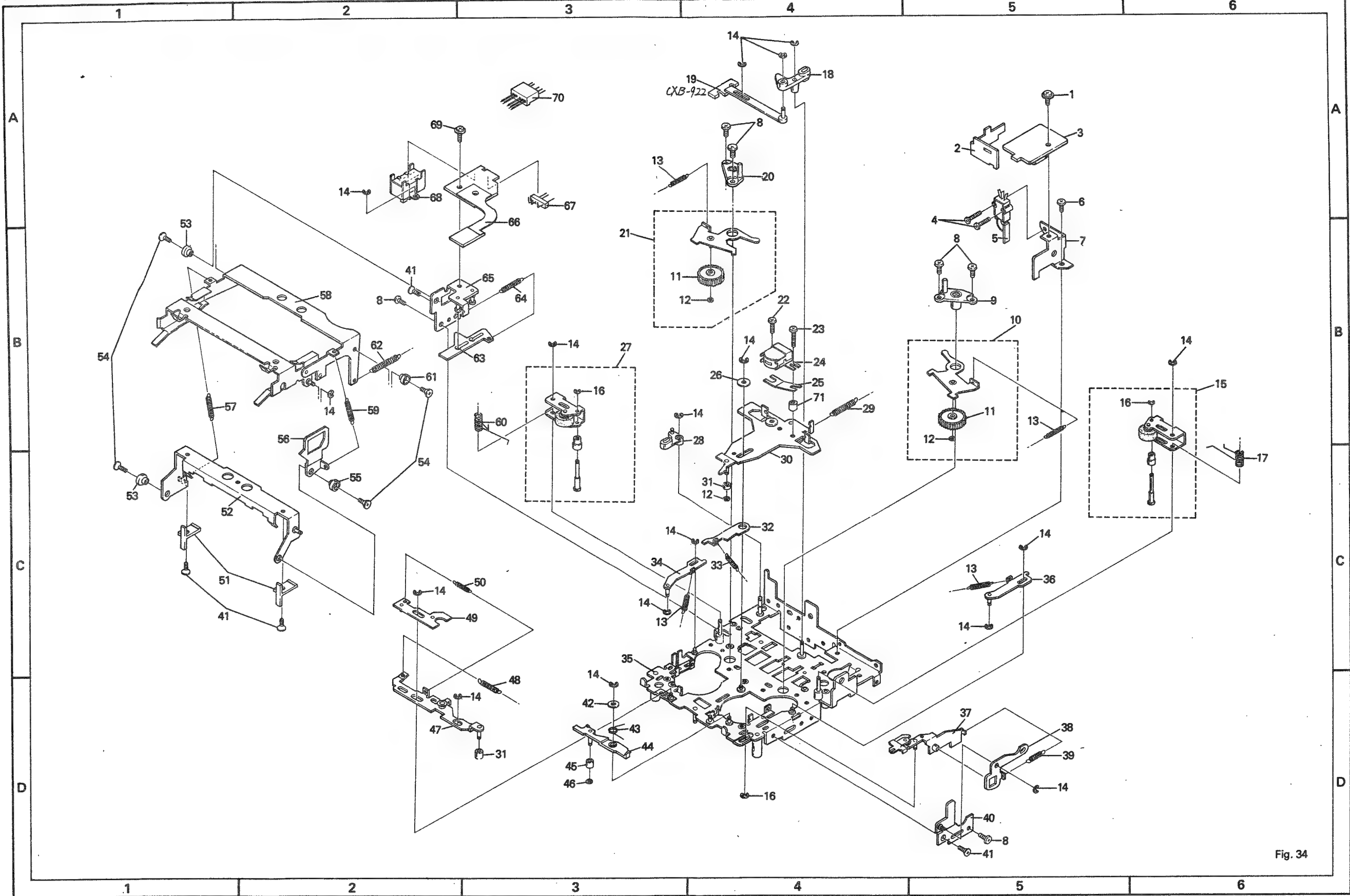


Fig. 34

EXPLODED VIEW (BOTTOM)(CX-118SM,118SV,118SM/A,118SV/A)

CX-118

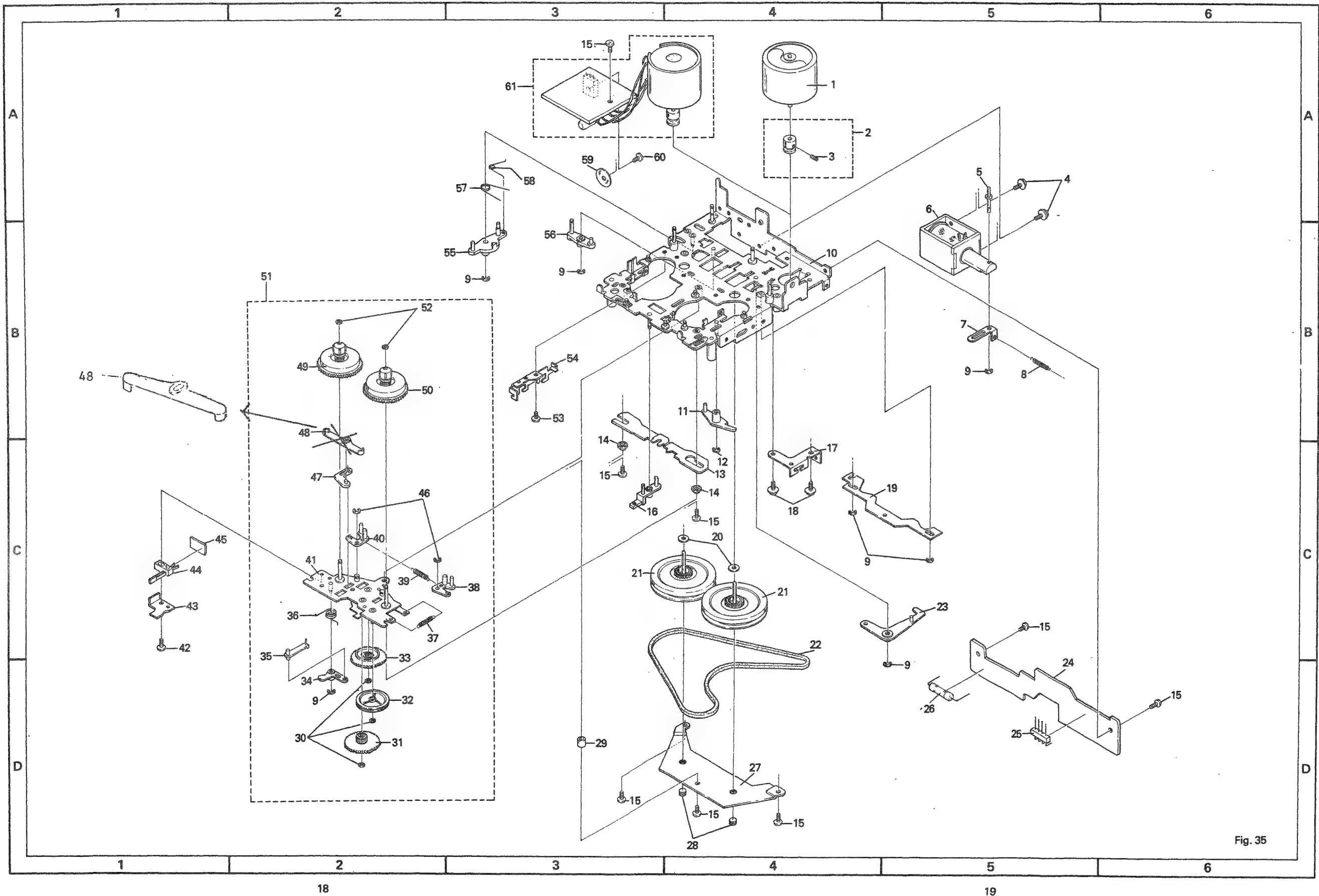


Fig. 35

EXPLODED VIEW (TOP)(CX-118FV, 118FV/A)

CX-118

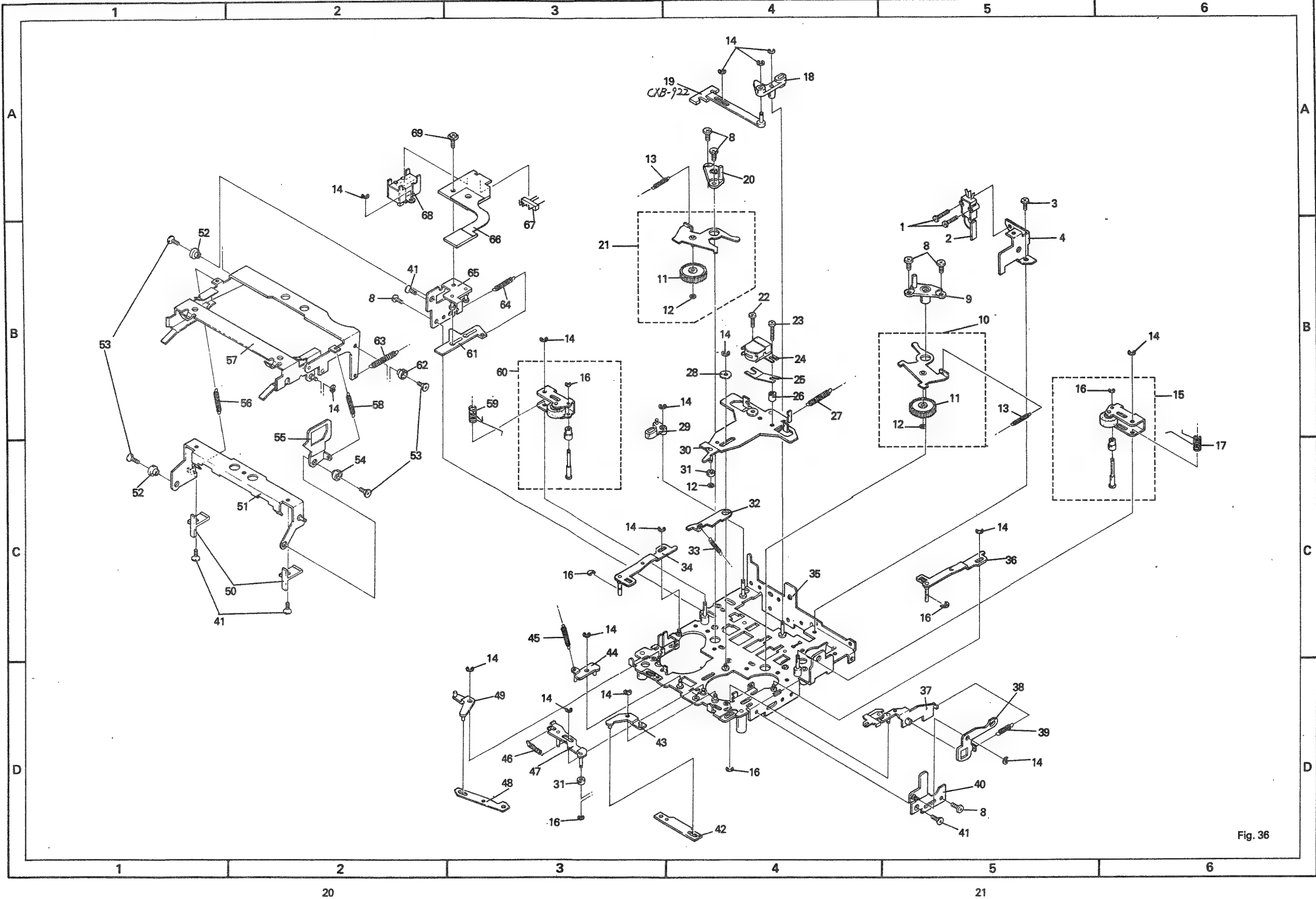


Fig. 36

EXPLODED VIEW (BOTTOM)(CX-118FV, 118FV/A)

CX-118

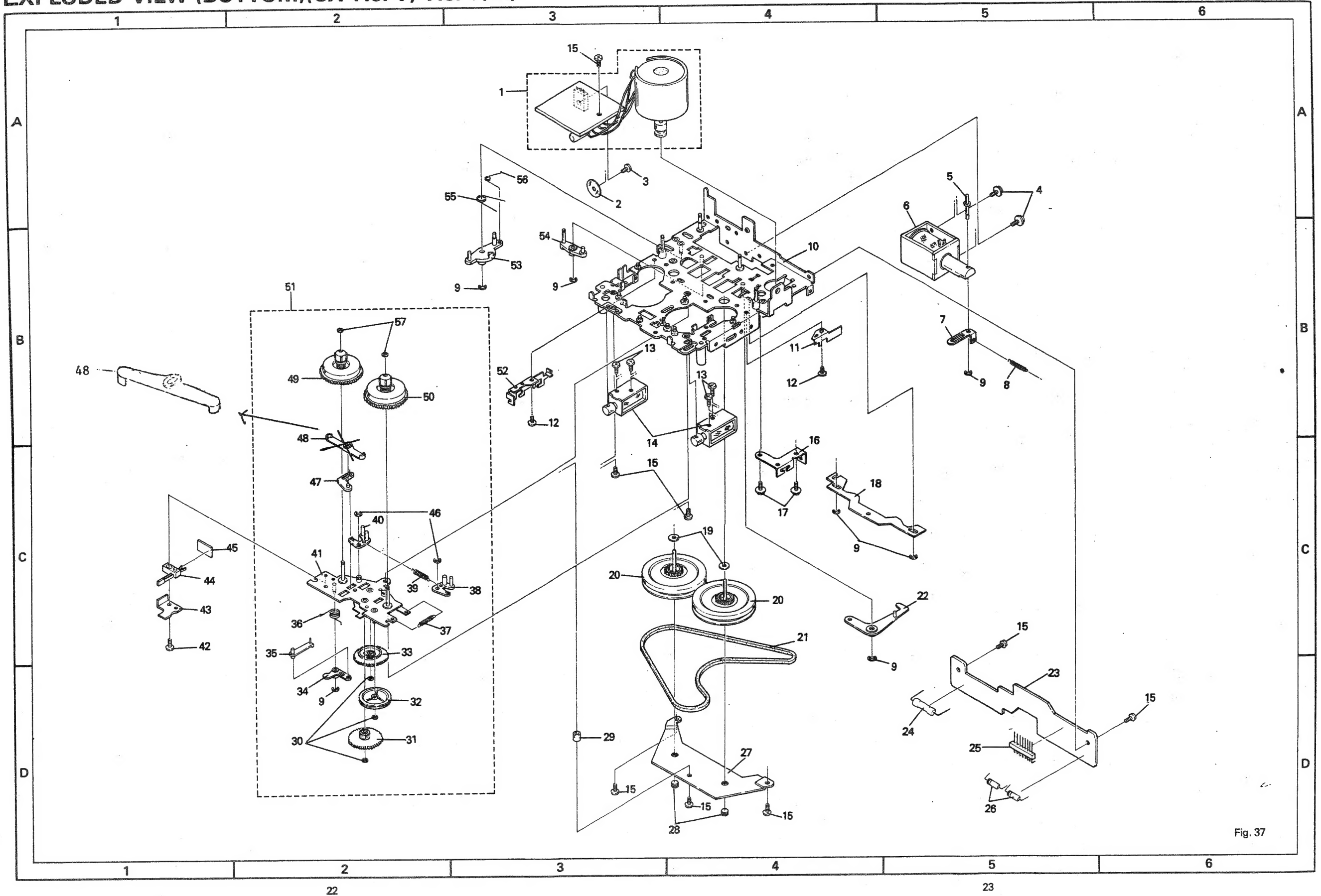


Fig. 37

PARTS LIST

Switch Unit

Part No.	Symbol & Description
CSH-062	S1 switch

Sensing P.W. Board

Part No.	Symbol & Description
1S1886 or W03A or SR1K2 RD1/2PS681J	D1, D2 (CX-118FV, 118FV/A) R1

Motor P.W. Board (CX-118SM, 118SM/A)

Part No.	Symbol & Description
1S1886 or W03A or SR1K2 1S1555 CKDYF103Z25	D1 D2 C1, C2
CEA330P16 RS2P150J	C3 R1

Miscellaneous Parts List

NOTICE:
For CX-118SV, 118FV, rewire to remove R1 (3.3Q).

Part No.	Symbol & Description
1S1886 or W03A or SR1K2 RN1P3R3K or RN1P3R3J	D1 R1 (CX-118SV/A, 118FV/A)
CSL-008 CSN-058	S1 Switch S2 Switch (CX-118SM, 118SM/A)
CSN-061	S2 Switch (CX-118SV, 118SV/A, 118FV, 118FV/A)
CXM-059	M Motor (CX-118SM, 118SM/A)
CXM-065	M Motor (CX-118SV, 118SV/A, 118FV, 118FV/A)
CPB-049 CXP-028 CXP-029	HD Head SO1 Solenoid SO2, SO3 Solenoid (CX118FV, 118FV/A)

NOTICE:
Parts whose parts numbers are omitted are subject to being not supplied.

Exploded View (Top) (CX-118SM, 118SV, 118SM/A, 118SV/A)

Key No.	Part No.	Description
1.	CBA-076	Screw, M2.6 x 6 (CX-118SM, 118SM/A)
2.		Shield (CX-118SM, 118SM/A)
3.		P.W. Board (CX-118SM, 118SM/A)

Key No.	Part No.	Description
4.	B10-805-A	BM2 x 8
5.	CSL-008	Switch
6.	B10-900-A	BM2.6 x 3
7.		Bracket
8.	B10-809-A	BM2.6 x 4
9.	CNR-128	Bearing
10.	CXB-843	Gear Unit
11.	CNV-950	Gear
12.	CBF-045	Washer
13.	CBH-524	Spring
14.	B20-101-B	EW2φ x 0.4t
15.	CXB-993	Pinch Roller Unit
16.	B20-111-B	EW1.5φ x 0.4t
17.	CBH-560	Spring
18.	CNV-947	Arm
19.	CXB-922	Lever Unit
20.	CNR-129	Bearing
21.	CXB-844	Gear Unit
22.	B06-802-A	Screw, M2 x 4
23.	CBA-082	Screw, M2 x 8
24.	CPB-049	Head
25.	CBL-178	Spring
26.	CBE-065	Washer
27.	CXB-994	Pinch Roller Unit
28.	CNV-987	Arm
29.	CBH-528	Spring
30.	CXB-847	Head Base
31.	CLA-831	Roller
32.		Cam
33.	CBH-529	Spring
34.	CXB-855	Lever Unit
35.		Chassis Unit
36.	CXB-854	Lever Unit
37.	CXB-861	Lever Unit
38.		Arm
39.	CBH-536	Spring
40.	CXB-862	Bracket Unit
41.	B10-609-A	CM2.6 x 4
42.	CBF-111	Washer
43.	CBH-533	Spring
44.		Arm
45.	CLA-863	Roller
46.	CBF-088	Washer
47.	CXB-856	Lever Unit
48.	CBH-547	Spring
49.	CXB-903	Lever Unit
50.	CBH-534	Spring
51.		Guide
52.	CXB-969	Arm Unit
53.	CLA-845	Bush
54.	B10-611-A	CM2.6 x 6
55.	CLA-844	Bush
56.		Arm
57.	CBH-535	Spring
58.	CXB-971	Holder Unit

PARTS LIST

Key No.	Part No.	Description	Key No.	Part No.	Description
59.	CBH-542	Spring	31.	CNV-955	Gear
60.	CBH-561	Spring	32.	CNV-954	Pulley (CX-118SM, 118SM/A)
61.	CLA-878	Bush	33.	CLA-914	Pulley (CX-118SV, 118SV/A)
62.	CBH-532	Spring	34.	CNV-956	Gear
63.	CNV-988	Lever	35.	CNV-959	Lever
64.	CBH-537	Spring	36.	CNV-959	Arm
65.	CXB-858	Bracket Unit	37.	CBH-521	Spring
66.	CNP-697	P.W. Board	38.	CBH-548	Spring
67.	CKS-052	Plug	39.	CNV-960	Lever
68.	CSH-062	Switch	40.	CBH-520	Spring
69.	CBA-076	Screw, M2.6 x 6	41.	CNV-961	Lever
70.	CDE-545	Connector (CX-118SM, 118SM/A)	42.	CXB-829	Sub Chassis Unit
71.	CNW-064	Rubber	43.	B10-805-A	BM2 x 8
			44.	CSN-058	Cover
					Switch (CX-118SM, 118SM/A)
				CSN-061	Switch (CX-118SV, 118SV/A)
			45.		P.W. Board
			46.	B20-103-B	EW2.5φ x 0.4t
			47.	CNV-958	Lever
			48.	CNV-957	Arm
			49.	CXB-833	Reel Unit
			50.	CXB-832	Reel Unit
			51.	CXB-860	Sub Chassis Assy (CX-118SM, 118SM/A)
				CXB-977	Sub Chassis Assy (CX-118SV, 118SV/A)
			52.	CBF-045	Washer
			53.	B10-900-A	BM2.6 x 3
			54.		Bracket
			55.		Arm
			56.		Arm
			57.	CBH-526	Spring
			58.	CBH-525	Spring
			59.	CNM-513	Insulator (CX-118SV, 118SV/A)
			60.	B10-811-A	BM2.6 x 6 (CX-118SV, 118SV/A)
			61.	CXM-065	Motor (CX-118SV, 118SV/A)

Exploded View (Bottom) (CX-118SM, 118SV, 118SM/A, 118SV/A)

Key No.	Part No.	Description
1.	CXM-059	Motor (CX-118SM, 118SM/A)
2.	CXB-996	Pulley Unit (CX-118SM, 118SM/A)
	CXB-997	
	CXB-998	
3.	B03-008-A	SF2.6 x 4 (CX-118SM, 118SM/A)
4.	B06-609-B	Screw, M2.6 x 4
5.	CLA-825	Shaft
6.	CXP-028	Solenoid
7.		Arm
8.	CBH-527	Spring
9.	B20-101-B	EW2φ x 0.4t
10.		Chassis Unit
11.	CNW-029	Arm
12.	B20-111-B	EW1.5φ x 0.4t
13.		Cam
14.	CLA-851	Collar
15.	B10-809-A	BM2.6 x 4
16.		Crank
17.		Bracket
18.	B06-696-A	Screw, M2.6 x 3
19.		Cam
20.	CBF-111	Washer
21.	CNR-130	Flywheel
22.	CNT-072	Belt
23.	CXB-849	Arm Unit
24.	CNP-698	P.W. Board (CX-118SV, 118SV/A)
25.	CKS-070	Plug (CX-118SV, 118SV/A)
26.	RD1/2PS681J	Resistor (CX-118SV, 118SV/A)
27.		Holder
28.	CNV-984	Screw
29.	CLA-817	Collar
30.	CBF-046	Washer

PARTS LIST CX-118

Exploded View (Top)(CX-118FV, 118FV/A)

Key No.	Part No.	Description
1.	B10-805-A	BM2 x 8
2.	CSL-008	Switch
3.	B10-900-A	BM2.6 x 3
4.		Bracket
5~7.	VACANT	
8.	B10-809-A	BM2.6 x 4
9.	CNR-128	Bearing
10.	CXB-843	Gear Unit
11.	CNV-950	Gear
12.	CBF-045	Washer
13.	CBH-524	Spring
14.	B20-101-B	EW2φ x 0.4t
15.	CXB-993	Pinch Roller Unit
16.	B20-111-B	EW1.5φ x 0.4t
17.	CBH-560	Spring
18.	CNV-947	Arm
19.		Lever
20.	CNR-129	Bearing
21.	CXB-844	Gear Unit
22.	B06-602-A	Screw, M2 x 4
23.	CBA-082	Screw, M2 x 8
24.	CPB-049	Head
25.	CBL-178	Spring
26.	CNW-064	Rubber
27.	CBH-528	Spring
28.	CBE-065	Washer
29.	CNV-987	Arm
30.	CXB-847	Head Base
31.	CLA-831	Roller
32.		Cam
33.	CBH-529	Spring
34.	CXB-852	Lever Unit
35.		Chassis Unit
36.	CXB-851	Lever Unit
37.	CXB-861	Lever Unit
38.		Arm
39.	CBH-536	Spring
40.	CXB-862	Bracket Unit
41.	B10-609-A	CM2.6 x 4
42.		Lever
43.	CNV-952	Arm
44.	CNV-951	Arm
45.	CBH-553	Spring
46.	CBH-531	Spring
47.	CXB-853	Lever Unit
48.		Lever
49.	CNV-953	Arm
50.		Guide
51.	CXB-969	Arm Unit
52.	CLA-845	Bush

Key No.	Part No.	Description
53.	B10-611-A	CM2.6 x 6
54.	CLA-844	Bush
55.		Arm
56.	CBH-535	Spring
57.	CXB-971	Holder Unit
58.	CBH-542	Spring
59.	CBH-561	Spring
60.	CXB-994	Pinch Roller Unit
61.	CNV-988	Lever
62.	CLA-846	Bush
63.	CBH-532	Spring
64.	CBH-537	Spring
65.	CXB-858	Bracket Unit
66.	CNP-697	P.W. Board
67.	CKS-052	Plug
68.	CSH-062	Switch
69.	CBA-076	Screw, M2.6 x 6

Exploded View (Bottom)(CX-118FV, 118FV/A)

Key No.	Part No.	Description
1.	CXM-065	Motor
2.	CNM-513	Insulator
3.	B10-811-A	BM2.6 x 6
4.	B06-609-B	Screw, M2.6 x 4
5.	CLA-825	Shaft
6.	CXP-028	Solenoid
7.		Arm
8.	CBH-527	Spring
9.	B20-101-B	EW2φ x 0.4t
10.		Chassis Unit
11.		Bracket
12.	B10-900-A	BM2.6 x 3
13.	B90-097-A	BM2 x 2.5
14.	CXP-029	Solenoid
15.	B10-809-A	BM2.6 x 4
16.		Bracket
17.	B06-696-A	Screw, M2.6 x 3
18.		Cam
19.	CBF-111	Washer
20.	CNR-130	Flywheel
21.	CNT-072	Belt
22.	CXB-849	Arm Unit
23.		P.W. Board
24.	RD1/2PS681J	Resistor
25.	CKS-054	Plug
26.	W03A or 1S1886 or SR1K2	Diode
27.		Holder
28.	CNV-984	Screw

PARTS LIST

Key No.	Part No.	Description
29.	CLA-817	Collar
30.	CBF-046	Washer
31.	CNV-955	Gear
32.	CLA-914	Pulley
33.	CNV-956	Gear
34.	CNV-962	Lever
35.	CNV-959	Arm
36.	CBH-521	Spring
37.	CBH-548	Spring
38.	CNV-960	Lever
39.	CBH-520	Spring
40.	CNV-961	Lever
41.	CXB-829	Sub Chassis Unit
42.	B10-805-A	BM2 x 8
43.		Cover
44.	CSN-061	Switch
45.		P.W. Board
46.	B20-103-B	EW2.5ø x 0.4t
47.	CNV-958	Lever
48.	CNV-957	Arm
49.	CXB-833	Reel Unit
50.	CXB-832	Reel Unit
51.	CXB-977	Sub Chassis Assy
52.		Bracket
53.		Arm
54.		Arm
55.	CBH-526	Spring
56.	CBH-525	Spring
57.	CBF-045	Washer

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<79J05E61S>

© OCT. 1979

<CRT-199-0>
Printed in Japan